



## Australia's future tax system

### FINAL REPORT: DETAILED ANALYSIS

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GLOSSARY

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## CHAPTER E: ENHANCING SOCIAL AND MARKET OUTCOMES

### E6. TOBACCO TAXATION

#### Key points

While consumer sovereignty is an important principle in tax policy design, government intervention in the tobacco market is justified by the strongly addictive qualities of tobacco, its serious health impacts, its uptake by minors and the costs that smoking imposes on non-smokers.

Whether taxation is an appropriate intervention is an empirical question that depends on its costs and benefits relative to those of available alternatives.

Tobacco taxes raise prices and reduce both smoking rates and smoking intensity. Australian retail prices for cigarettes are moderate by international standards and taxes constitute a relatively small share of the retail price. Indexation of excise rates to consumer prices means that excise falls as a proportion of average wages over time.

To maintain the value of tobacco excise in terms of household income, it should be indexed to wages rather than consumer prices. The existing regime for tobacco taxation in Australia should be retained with the rates of tax substantially increased, depending on further evidence on the costs of harm from tobacco smoking.



## CHAPTER E: ENHANCING SOCIAL AND MARKET OUTCOMES

### E6. TOBACCO TAXATION

#### E6–1 WHY TAX TOBACCO?

The benefits that smokers get from smoking may include immediate pleasure, control of stress, improved self-image and the avoidance of withdrawal symptoms. The costs borne by smokers are primarily the cost of buying tobacco products and, in some cases, serious illness and premature death. Tobacco is a major cause of heart disease (including heart attack), lung cancer, chronic obstructive pulmonary disease (including emphysema) and stroke. Smoking is estimated to have accounted for around 15,000 deaths in Australia in 2003 (Begg et al. 2007). Giving up smoking considerably reduces the chances of serious disease. One study suggests that 4 per cent of quitters will avoid a heart attack, lung cancer, chronic obstructive pulmonary disease or stroke that they would have suffered had they continued to smoke for the next ten years (Hurley & Matthews 2007).

#### **Smokers suffer self-control problems**

Tobacco differs from most goods in that its consumption poses self-control problems for most consumers and causes very substantial harm to many consumers. These problems do not by themselves mean that consumers are unable to make decisions about tobacco consumption that give them the most satisfaction over time. Even if a prospective smoker takes into account the chances of becoming addicted, the costs of addiction and the risky costs of consumption, choosing to consume may still be consistent with deriving the greatest available satisfaction over time (Stigler & Becker 1977).

However, there is strong evidence that this 'rational addiction' model does not accurately represent most smokers' choices. First, not only do most smokers become addicted but most addicted smokers display time-inconsistent preferences. That is, they weigh consumption in the present heavily and costs and benefits in the future less heavily. As each day arrives, their preferences shift to give a heavier weight to costs and benefits on that particular day — that is, their preferences change over time (Gruber & Köszegi 2001). A consumer with such preferences may be able to see that their lifetime satisfaction would be increased by giving up smoking and decide to give up smoking at some time in the future, but when the time to give up arrives, they may find themselves unwilling to put their plan into action. Smokers set up commitment mechanisms to help them overcome their inconsistent preferences — betting with others, advertising their decision to friends and relatives or joining a support group — but these are often ineffective. Between 2000 and 2005, about two-thirds of smokers in Victoria attempted to quit but only 30 per cent of these were successful (Brennan et al. 2007).

Second, the decision to start smoking is usually taken by young people. In Australia in 2004, the average age of initiation among those who had ever smoked was 16 (AIHW 2005). In the US, around three quarters of smokers begin smoking before the age of 19 (Gruber 2002). There is also evidence that young people are well informed about the health risks associated with smoking but underestimate how addictive it is. In research from the United States, 60 per cent of adolescents and 48 per cent of adults agreed with the statement 'I could smoke for a few years and then quit if I wanted to' (Arnett 2000).

Third, many daily cigarette smokers support an increase in cigarette taxes, under certain conditions. A Victorian survey in 2008 found that 61 per cent of current smokers supported an increase in tobacco taxes, provided that some of the money was used to fund services to help smokers quit (McCarthy 2009). Evidence from the US and Canada suggests that smokers in jurisdictions with high tobacco taxes are happier than those in low tax jurisdictions (Gruber & Mullainathan 2002). It is unusual for consumers to support higher taxes on a product that they consume themselves, or to be happier in the presence of higher taxes on such a product, and this provides further support for the view that some smokers see higher prices as an incentive to implement their plans to give up smoking.

Individual consumers are usually the best judges of how to spend their money on goods and services of any type ('consumer sovereignty'). But as smoking is addictive, accompanied by inconsistent consumer preferences and predominantly

taken up by minors, the government has a legitimate role in mitigating the costs that smoking imposes on smokers themselves.

An important consequence is that tobacco taxes should be set to reduce the costs that smokers impose on themselves and others, not to raise as much revenue as possible. Tobacco taxes can raise significant amounts of revenue but this is only a by-product of their primary purpose.

## Principles

Consumer sovereignty is an important principle that underlies much tax policy design.

Several factors justify government intervention to reduce tobacco consumption. First, tobacco is strongly addictive. Second, its consumption is accompanied by inconsistent preferences — smokers place a heavier weight on the current day's costs and benefits than on any other day's. As a result, preferences shift from day to day. Third, smoking is extremely harmful to many long term smokers. Fourth, most people who become addicted do so before the age of 18.

### Smokers also impose costs on others

Smokers sometimes impose costs on others. The costs of passive smoking include the costs of disease and premature death caused by passive smoking, as well as the difficult-to-measure discomfort of those exposed to others' smoke. The US Surgeon General has concluded that 'exposure of adults to second-hand smoke has immediate adverse effects on the cardiovascular system and causes coronary heart disease and lung cancer' (US Department of Health and Human Services 2006). A recent assessment by Collins and Lapsley (2008b) concluded that second-hand smoke caused the deaths of 149 Australians in 2004–05.

Babies born to smokers weigh on average about 200 grams less than babies born to non-smokers (US Department of Health and Human Services 2004). Babies with low birth weight have poorer average health outcomes than other babies. Babies of Australian women who smoke during pregnancy are twice as likely as other babies to have low birth weight (less than 2.5 kilos) and are more likely to require special care (Laws et al. 2006).

Which costs are private and which are external will be affected by funding arrangements in the health sector. Given Australia's current health care funding arrangements, only a small proportion — around 17 per cent of all health care costs — is met by individuals themselves. The remainder is met by taxpayers

through the public health system, by health fund members and by employers through workers' compensation premiums (AIHW 2008b). In any given year, a smoker's healthcare is likely to cost more on average than that of a non-smoker of the same age and sex. However, because smokers tend to die earlier than non-smokers, the *lifetime* healthcare costs of smokers and non-smokers in high-income countries may be fairly similar. Quantitative studies have reached conflicting conclusions (World Bank 1999).

Taxation is one method of addressing spillover costs but is not necessarily the best instrument available. For example, recent restrictions on smoking in restaurants, shops, workplaces, bars and other public places have reduced non-smokers' exposure to second-hand smoke, though non-smokers may still be exposed to significant levels of smoke in the home.

## Principles

***The costs that smoking imposes on non-smokers further support the case for government intervention.***

***Taxation may be an appropriate policy choice where it is an effective way for the government to achieve its objectives in a market for specific goods and services and where the costs and benefits of taxation compare favourably with available alternatives***

## E6. TOBACCO TAXATION

### Key points

While consumer sovereignty is an important principle in tax policy design, government intervention in the tobacco market is justified by the strongly addictive qualities of tobacco, its serious health impacts, its uptake by minors and the costs that smoking imposes on non-smokers.

Whether taxation is an appropriate intervention is an empirical question that depends on its costs and benefits relative to those of available alternatives.

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## **E6. TOBACCO TAXATION**

### **E6–2 EXISTING TAXES ON TOBACCO**

Currently in Australia, cigarettes and cigars that contain 0.8 grams or less of tobacco are taxed on a 'per stick' basis, regardless of how much tobacco the stick contains. From 1 August 2009 the excise was \$0.25833 per stick or \$6.46 on a pack of 25. Excise rates are indexed twice a year in line with the CPI. Since wages generally rise more quickly than consumer prices, this means that excise falls as a proportion of average wages over time.

Tobacco products are also subject to GST, which is levied on the post-excise price. On a pack of 25 cigarettes with a retail price of \$13.00, excise accounts for 50 per cent of the retail price and GST for 9 per cent.

Other tobacco products — including cigars and cigarettes containing more than 0.8 grams of tobacco, rolling tobacco and smokeless tobacco — are subject to excise at a per kilo rate equivalent to the per stick tax on 0.8 gram sticks. From 1 August 2009, this amounted to \$322.93 per kilo of tobacco content. The main features of the existing excise system for tobacco have been in place since 1999, when the per-stick rate was introduced. There has been no real increase in the rate of excise since then.

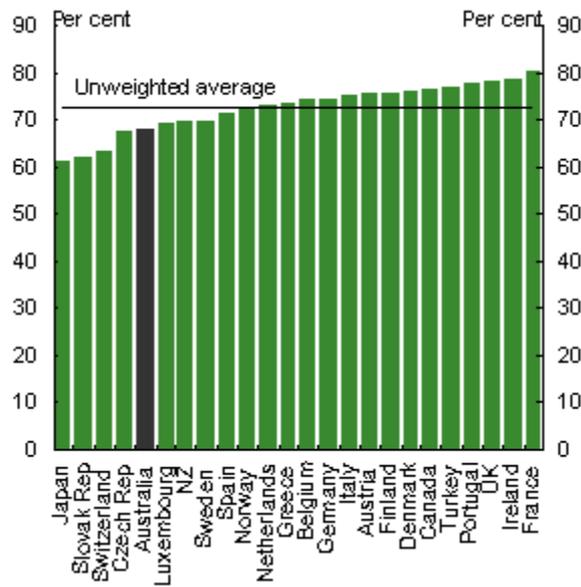
A person over 18 years of age can bring 250 cigarettes (or 250 grams of other tobacco products) into Australia duty free. This tax concession costs the revenue around \$200 million per year. The sale of smokeless tobacco has been prohibited since 1991. It may legally be imported for personal use, subject to excise-equivalent rates of customs duty.

In 2007–08, the Australian government raised \$5,666 million from tobacco excise and \$273 million from customs duty on tobacco imports, together amounting to 1.7 per cent of total tax revenue collected by Australian governments.

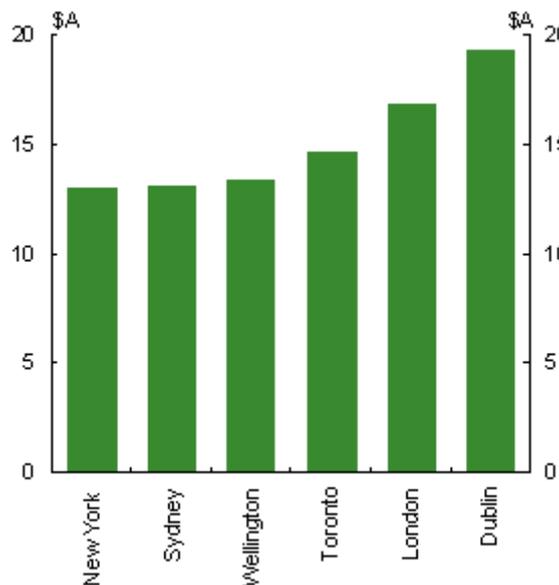
Australian taxes on tobacco products are low, as a proportion of the retail price, compared with other OECD countries. Tobacco prices in Australia are moderate by the standards of comparable countries (see Chart E6–1).

Chart E6–1: Tobacco taxes and prices in OECD countries

Panel A: Tobacco taxes as a percentage of price, 23 OECD countries



Panel B: Price of 30 cigarettes in six English-speaking cities, September 2008



Note: Tobacco taxes in Panel A include VAT, and Australia's GST, as well as tobacco-specific taxes. Many European countries have much higher VAT rates than Australia's 10 per cent GST rate, so that the differences between total tax rates on tobacco products and other products are smaller in those countries than in Australia. In Panel B, prices are for popular brands from medium-priced stores.

Source: Panel A: Scollo and Winstanley (2008); Panel B: National Preventative Health Task Force (2009).

## Findings

By international standards, Australian retail prices for cigarettes are moderate and taxes constitute a relatively small share of the retail price. Indexation of excise to consumer prices means that excise will fall in relation to wages over time. Duty-free concessions allow international travellers, whether Australians or foreigners, to consume tobacco products in Australia free of specific tobacco taxes.

### Impact of tax on demand

Demand for tobacco products responds to price changes, but less so than demand for many other goods. A 10 per cent increase in price would decrease consumption by around 4 per cent (Chaloupka & Warner 1999). Demand among young people, low income people and men is more responsive than among older people, higher income people and women. Although many young people begin to experiment with cigarettes they obtain from others, there is strong evidence that high tobacco taxes, and consequent high prices, significantly reduce both smoking rates and smoking intensity among young people (Carpenter & Cook 2007; Ross & Chaloupka 2003).

## Findings

Tobacco taxes raise prices and reduce both the number of people who smoke and the total amount of tobacco consumed. As tobacco is a highly addictive commodity, consumption does not respond readily to price changes — that is, demand for tobacco is relatively inelastic. Young people and low income people respond more to tobacco price changes than others.

### Low income and disadvantaged people smoke more

In 2007, 19.4 per cent of Australians aged 14 years or older had smoked in the past 12 months (AIHW 2008a). Eighty-six per cent of smokers smoked daily. The proportion of the population that smokes has been falling over the past 20 years (see Chart E6–2) and the average consumption per smoker has also declined, from 15.7 per day in 1997 to 13.0 per day in 2005 (Scollo &

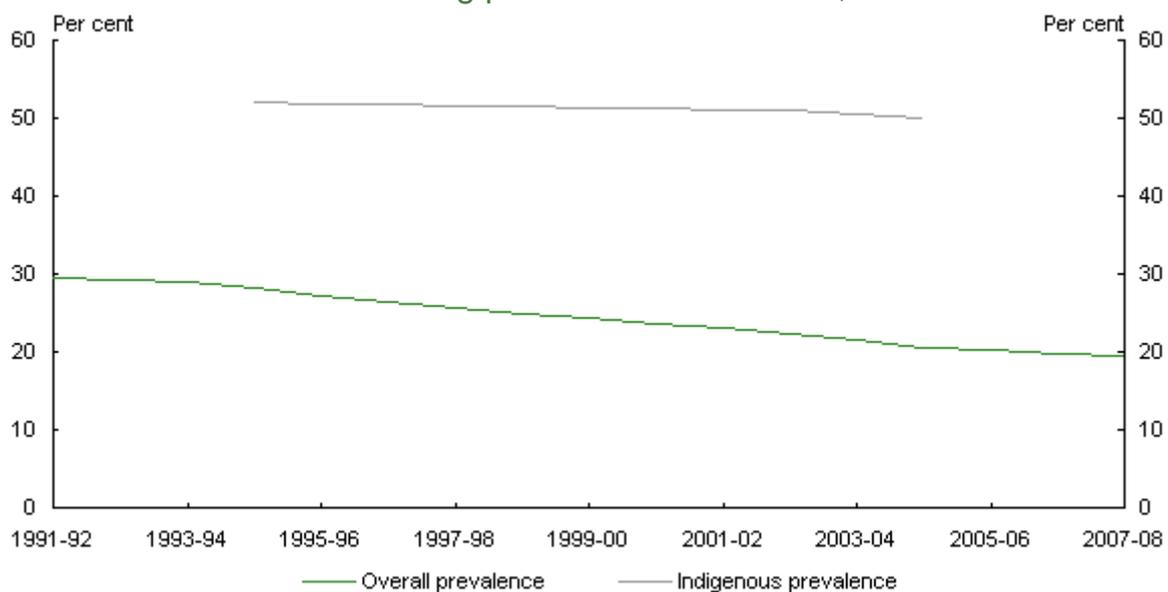
Winstanley 2008). Tobacco consumption varies among different demographic groups. People in lower socioeconomic groups smoke more than those in higher groups. People in the lowest 20 per cent by income devote 1.8 per cent of their total goods and services spending to tobacco compared to 0.8 per cent for people in the highest 20 per cent (ABS 2006c). In 2004, 23 per cent of people with an education level of Year 9 or less smoked while only 11 per cent of those who had studied at university smoked (Scollo & Winstanley 2008). Other indicators of socioeconomic status display a similar pattern (Siahpush & Borland 2001). Smoking rates are also high among some disadvantaged groups.

In 2004–05, around 50 per cent of Aboriginals and Torres Strait Islanders were daily smokers (ABS 2006d), compared with around 17 per cent of the general population (AIHW 2005). Smoking rates among Indigenous people have not fallen significantly since 1994–95. Smoking is the single biggest contributing factor to the life expectancy gap between Indigenous and non-Indigenous Australians (Ivers 2001).

People with mental illness are much more likely to smoke than others. A 1997–98 study found that smokers account for 73 per cent of men and 56 per cent of women with psychotic illnesses such as schizophrenia (Jablensky et al. 1999).

Data from 1995 reveal smoking prevalence among single mothers of 46 per cent, compared with 26 per cent for the general population at that time (Siahpush et al. 2002).

Chart E6–2: Smoking prevalence in Australia, 1991–2007



Source: Scollo & Winstanley 2008.

Lower income people who continue to smoke are adversely affected by tobacco taxes. Many of them incur the health costs of smoking twice over — by paying high taxes designed to reduce those costs and by suffering the health effects of smoking. Assuming unchanged levels of tobacco consumption, a 10 per cent increase in tobacco excise rates would be equivalent to an additional tax on gross household income of 0.16 per cent for households in the lowest 20 per cent of incomes but only 0.03 per cent for households in the highest 20 per cent. A similar regressive impact would apply to specific disadvantaged groups in which smoking rates are particularly high. On the other hand, some lower income people would avoid serious harm by giving up smoking as a result of tobacco taxes — and are more likely to do so than high income people.

## **E6–3 EXCISE RATES SHOULD BE HIGHER**

### **RECOMMENDATION 73:**

The existing regime for tobacco taxation in Australia should be retained, with the rates of tax substantially increased, depending on further evidence on the costs of harm from tobacco smoking.

### **RECOMMENDATION 74:**

Tobacco excise should be indexed to a broad measure of wages rather than CPI.

### **RECOMMENDATION 75:**

There should be no duty free allowance on tobacco for international travellers entering Australia.

Consistent with the broad approach to goods and services taxation taken in this report, the principal issues for tobacco taxes are whether government policy should seek to contain the very heavy mortality and morbidity costs borne by smokers and, if so, whether taxes are an effective means of doing so.

The strongly addictive properties of tobacco, together with the time-inconsistent preferences that characterise addicted consumers, are sufficient to make an in-principle case for government intervention. Taxation is not, however, the only effective policy instrument available to government. A range of other measures

could help to reduce the costs of smoking borne by smokers: banning point-of-sale advertising; banning the promotion of tobacco companies; prohibiting marketing on packaging; limiting the places at which tobacco products can be sold; subsidising nicotine replacement therapies; imposing heavier penalties for, and improving the enforcement of prohibitions on providing tobacco products to minors. Limitations on where people are allowed to smoke can significantly reduce the external costs of smoking.

The Review Panel believes that governments should continue to use non-tax policy instruments to address the costs of smoking. Nevertheless, higher prices for tobacco can significantly reduce tobacco consumption and, therefore, the negative effects of smoking on smokers and others.

There are significant empirical difficulties in calculating an optimal level of taxation in a market where consumers have time-inconsistent preferences. The greatest practical difficulty is to estimate the strength of the extra weighting that consumers give to current period costs and benefits. Spillover costs need to be taken into account but are small compared with the costs borne by smokers themselves.

A model of tobacco consumption that incorporates time-inconsistent preferences, with plausible parameters, suggests that tobacco excise rates could be increased substantially (see Box E6–1; Gruber & Koszegi 2008). There are, however, considerable uncertainties surrounding these calculations: they should be treated only as indicative.

### **Box E6–1: A model of tobacco consumption with time-inconsistent preferences**

Economists have developed a formal model of tobacco consumption that takes into account the time-inconsistent preferences that most addicted smokers display (Gruber & Köszegi 2001). The model allows the calculation of an ideal tax rate that would correct for the self-control problems that smokers experience.

The ideal tax rate depends on a number of parameters. It depends on how strongly smokers privilege current costs and benefits over future costs and benefits. The stronger the current period preference, the harder smokers find it to carry out plans to stop smoking and the higher the tax needs to be to help them overcome their self-control problems. The more harm is done by current smoking, the higher the tax needs to be to limit the damage suffered by smokers with self-control problems. The ideal tax rate also depends on whether the smoker understands their self-control problem — that is, whether they are

'naïve' or 'sophisticated'. A naïve smoker does not realise they have a self-control problem.

Estimating the Gruber and Köszegi model with Australian data, where available, suggests that tobacco tax rates could be either side of current levels (see Table E6–1). In the table, the value representing the strength of smokers' current period preference can range from 0 to 1. A value of 0 would mean that current period preference is absolute, so that a smoker places no weight at all on what happens in future. A value of 1 would mean that there is no current period preference, so that a smoker recognises the full costs of smoking, and can make a rational decision about their current smoking on that basis. The values tested in the table cover the mid-range of empirical estimates.

Table E6–1: Range of optimal tobacco tax rates for Australia (\$ per stick)

	<b>Strength of current period preference</b>				
	<i>0.60</i>	<i>0.65</i>	<i>0.70</i>	<i>0.75</i>	<i>0.80</i>
Sophisticated smokers	0.31	0.27	0.22	0.18	0.14
Naïve smokers	0.47	0.41	0.35	0.29	0.23

Note: The optimal tax rates for naïve smokers do not take into account behavioural responses that may somewhat offset their self-control problems. Gruber and Koszegi do not derive the optimal tax taking this effect into account as they focus on the case of sophisticated smokers. The parameter for current period preference lies between 0 and 1; the lower the value, the higher the preference accorded to the current period. The current per stick tax is \$0.25.

While this is an attractive model that explains much actual smoking behaviour, there are a number of reasons not to place too much confidence in the estimates it generates.

It is very difficult to measure the strength of an individual's current period preference.

Different groups may vary in the strength of their current period preference. If so, a uniform tax will overtax some and under-tax others. In particular, young people underestimate their chance of becoming addicted

and their smoking responds more to price changes, so estimates for sophisticated smokers may underestimate the appropriate overall rate.

It is difficult to estimate the value of life-years lost through smoking and of the other harms that smoking causes.

Not all smokers are the same but they all pay the same tax. High tobacco taxes impose costs on the small proportion of occasional smokers who are at little risk of harm.

As Australia's tobacco taxes are low by international standards, it is feasible to increase them substantially. Doing so would encourage smokers to quit — a 10 per cent increase in the price of cigarettes would reduce the number of people who smoke by about 2½ per cent and would decrease total tobacco consumption by around four per cent (Chaloupka & Warner 1999). The degree of responsiveness among young people, low income people and men is higher than among older people, higher income people and women. As around three million Australians smoke and each long term smoker loses, on average, around six years of life, a substantial increase in the price of cigarettes could considerably reduce the number of life years lost by Australian smokers.

It is difficult to determine the right rate of tax for tobacco products. Assessment of the rate would be easier if we had better evidence about the marginal costs of tobacco use — that is, the costs of one more or less cigarette smoked — rather than just the average costs of tobacco use. More information about the strength of smokers' current period preference would also be useful.

There is, however, a good case for a substantial increase beyond those that would be entailed by the changes to indexation arrangements discussed below (see Recommendation 73).

### **Tobacco excise should be indexed to wages, not CPI**

Since the main public policy purpose of tobacco taxation is to reduce the harm smokers suffer from smoking by keeping prices high, the Review Panel believes it would be appropriate to index tobacco excise to wages rather than consumer prices. Wages tend to increase more rapidly than consumer prices, largely as a result of increased productivity, so tobacco excise, which is currently indexed to CPI, tends to decline as a proportion of average wages. Over time, this makes cigarettes more accessible to wage earners and others, such as pensioners, whose incomes are tied to wages. To maintain the value of tobacco excise as a proportion of average wages and hence, indirectly, as a proportion of household

incomes, the Review recommends indexation to a broad measure of wages in the Australian economy (see Recommendation 74).

### Higher taxes and illicit tobacco

In 2005, it was estimated that one in 17 cigarettes consumed in Australia contained illegal 'chop chop' diverted from legal tobacco production (PwC 2005). This proportion is likely to have fallen since the end of legal tobacco growing in Australia in 2007. Importation of 'counterfeit' cigarettes — factory made and presenting as legally produced and distributed cigarettes — is relatively limited in scope.

Heavy taxation of any commodity increases incentives for the illegal supply of that commodity. For tobacco, this is a relatively minor problem at current levels of tax. However, if taxes rose significantly, there would be more incentives for illegal production and importation. This makes it more important for policy makers to use instruments other than taxation to address the costs of tobacco consumption. **It is, however, unlikely that any feasible increase in taxation would see an increase in illegal supply sufficient to undermine the effectiveness of the existing taxation arrangements.**

### Duty free tobacco should be abolished

The duty free tobacco allowance undermines the objectives of tobacco taxation and involves a significant revenue loss (in the order of A\$200 million per year). There is no reason why international travellers should enjoy a tax concession on cigarettes smoked in Australia. The Review Panel believes that inbound duty-free arrangements should be abolished (see Recommendation 75). People could be allowed to bring into the country up to 25 cigarettes or their equivalent duty-free, so that smokers would not have to pay duty on their daily supply.