

The International Tobacco Control Policy Evaluation Project

# Tobacco Price and Taxation

## ITC Cross-Country Comparison Report



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UNIVERSITY OF  
**WATERLOO**



# ITC Cross-Country Comparison Report Tobacco Price and Taxation march 2012

## Acknowledgement

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# BACKGROUND AND INTRODUCTION

## Introduction to this Report and the ITC Project

With the number of tobacco-related deaths expected to increase from 100 million in the 20<sup>th</sup> century to 1 billion people in the 21<sup>st</sup> century, there is great urgency to disseminate research findings that can inform the development and implementation of effective tobacco control policies.

The International Tobacco Control Policy Evaluation Project (the ITC Project) was created in 2002 as an evidence-gathering system for evaluating the effectiveness of tobacco control policies of the WHO Framework Convention on Tobacco Control (FCTC). The ITC Project is now an international collaboration involving over 100 tobacco control researchers and experts across 23 countries inhabited by over 70% of the world's tobacco users. In each country, longitudinal cohort surveys of representative samples of tobacco users (and non-tobacco users in many countries) are being conducted, with an emphasis on measuring key indicators of policy effectiveness.

This report presents initial findings on cross-country differences on key indicators of the effectiveness of price and tax policies across 19 countries of the ITC Project. A primary objective of the ITC Project, and of this report, is to disseminate findings on the effectiveness of tax measures to policymakers and other public health stakeholders to promote strong evidence-based policies on price and tax, as required by Article 6 of the FCTC.



### FCTC Measures Relating to Price and Tax

Article 6 of the WHO Framework Convention on Tobacco Control (FCTC) obligates countries that have ratified the treaty to adopt pricing and taxation measures in order to reduce tobacco consumption.

The fourth session of the Conference of the Parties (COP) to the WHO FCTC established a working group to develop specific guidelines for effective implementation of Article 6, which will be submitted for consideration at the fifth session of the COP.

#### Article 6 states that :

- Price and tax measures are an effective and important means of reducing tobacco consumption by various segments of the population.

#### Parties should implement measures which may include:

- Implementing tax policies and, where appropriate, price policies, on tobacco products so as to contribute to the health objectives aimed at reducing tobacco consumption.
- Prohibiting or restricting sales to and/or importations by international travellers of tax- and duty-free tobacco products.

### Tobacco Tax: The Most Effective Tobacco Control Method

Increasing tobacco taxes and prices is recognized worldwide as the single most cost-effective measure of tobacco control and a critical component of a comprehensive tobacco control strategy. It is well established that increasing excise taxes and prices is an effective intervention for reducing overall tobacco consumption and prevalence of tobacco use, particularly among youth.<sup>1, 2</sup>

However, the potential impact of tax policies on consumer behavior only applies if the tax changes are accompanied by corresponding changes in retail prices.

For each 10% increase in retail prices, consumption has been shown to decrease by up to 4% in high-income countries and at least as much, often more, in most low- and middle-income countries, and smoking prevalence reduces by about half those rates.<sup>1, 3</sup> This inverse relationship between price and tobacco consumption suggests that increasing tobacco taxes by a significant amount would prevent millions of premature deaths caused by tobacco use worldwide. For example, it is estimated that tripling excise tax on cigarettes would, on average, double the retail price and decrease consumption by at least 30%, at the same time as it would increase tax revenue. This intervention would save 115 million lives by the year 2050.<sup>4</sup>

## TYPES OF TOBACCO TAXES

### Excise Tax

A tax applied to selected goods which are produced within a country or imported and sold in that country.

### Specific Tax

Excise tax that is based on quantity or weight (e.g., per a pack of 20 cigarettes or per gram of tobacco).

### Ad Valorem Tax

Excise tax that is based on the value of the product (e.g., a specific percentage of the manufacturer's price or the retail price).

### Value-Added Tax (VAT)

A consumption tax that is applied to many products levied as a percentage of the value added at each stage of production.

## SUMMARY OF BEST PRACTICES IN TOBACCO TAXATION<sup>5</sup>

- Governments should adopt relatively simple tobacco excise tax structures that rely more on specific excises and that apply equivalent taxes to all tobacco products.
- Governments should use revenue from tobacco taxes to fund tobacco control programs and other health promotion initiatives.
- In order to decrease the affordability of cigarettes, taxes must be increased regularly at a rate that surpasses increases in consumer prices and incomes.
- Tobacco tax administration should be strengthened so as to reduce tax avoidance and tax evasion and maximize the public health and revenue impact of tobacco taxes.

## SUMMARY OF RESEARCH EVIDENCE ON TOBACCO PRICE AND TAX

### IARC confirms effectiveness of tax and price policies

- In an important review of the evidence on the effectiveness of price and tax policies, the International Agency for Research on Cancer (IARC) concluded there was sufficient evidence that increasing tobacco taxes and prices (1) **reduces** overall tobacco consumption and prevalence of tobacco use; (2) **prevents** initiation among youth; and (3) **promotes** cessation among current users.<sup>2</sup>

### Specific taxes are more effective than ad valorem taxes

- Tobacco excise taxes are more effective in reducing consumption and encouraging quitting when they are specific to the units of consumption (e.g., per stick, pack, weight of tobacco), as opposed to ad valorem taxes, which are based on value (e.g., imposed as a percentage of price).
- Several countries in the Asian region (e.g., Bangladesh, Thailand) levy ad valorem taxes on tobacco, which have been shown to encourage smokers to switch to cheaper products instead of quitting.<sup>6</sup>

### Harmonization of tax rates minimizes substitution

- The harmonization of taxes across different tobacco products to a uniform rate is also an important component of an effective taxation policy.
- Differential tax rates between tobacco products, and across brands of cigarettes at different price tiers, may encourage smokers to switch to cheaper products in response to tax or price increases.

### Governments can gain from tax increases

- Opponents of tax increases argue that such increases will result in a significant loss of government revenue; however, evidence indicates this is not the case, and that revenues will increase following a tax increase.<sup>1,7</sup>
- ITC research in Bangladesh found that the gain in revenue from tobacco price increases would be greater than the loss in revenue from decreased consumption of tobacco, resulting in a net gain of tax revenue for the government.<sup>6</sup>
- Increases in government revenues due to tax increases could then be used towards other important tobacco control interventions, which may increase public support for raising taxes.<sup>8</sup>

### The poor benefit most from tax and price increases

- Opponents also argue that tax increases impose an unfair burden on the poor; however, evidence suggests that smokers of lower socio-economic status (SES) actually stand to gain the most from increased tax and prices.
- Research has demonstrated that smokers with lower SES are more price-sensitive, suggesting that increasing taxes would have greater impact on reducing consumption among low SES smokers than among high SES smokers, which would lead to greater gains in health among low SES smokers.<sup>6</sup>



# ITC Studies on Tobacco Price and Tax

- Hyland et al. (2006) looked at the relation between cigarette purchasing patterns and cessation in the ITC Four Country Survey (US, UK, Canada, Australia). Smokers who purchased from a low/untaxed source at Wave 1 were less likely to make a quit attempt at Wave 2, indicating that the availability of low/untaxed cigarettes may undermine the influence of increased taxes.<sup>9</sup>
- Licht et al. (2011a) found that smokers in the ITC Four Country Survey (US, UK, Canada, Australia) who engaged in any price/tax avoidance behaviors (including purchasing from low/untaxed sources, purchasing cartons, and using discount cigarettes) at baseline were 28% less likely to report cessation behaviors at a one-year follow-up.<sup>10</sup> In a second paper, Licht et al. (2011b) found that such price/tax avoidance behaviors were more likely among smokers of lower SES.<sup>11</sup>
- Ross et al. (2010) examined predictors of what smokers in the US, Canada, UK, and Australia say they will do in response to a hypothetical 50% increase in cigarette prices and found that anticipated higher prices increased the likelihood of adult smokers reducing their consumption of cigarettes and increasing intentions to quit. The magnitude of the price increase was a more important factor than average cigarette prices.<sup>12</sup>
- Nargis et al. (2010) used ITC Bangladesh Survey data to estimate the potential impact of varying levels of tax increases on cigarettes and bidis. These analyses predicted that significant increases in tobacco taxes would lead to major reductions in consumption and prevalence while also significantly increasing tax revenue.<sup>6</sup>

## TAX AVOIDANCE AND EVASION

The effectiveness of taxes at reducing tobacco use provides a strong incentive for tobacco users and manufacturers to devise ways to avoid or evade tobacco taxes.

**Tax avoidance** by tobacco users involves legal purchasing behavior with the objective to pay less or no taxes. Examples include cross-border shopping, duty-free shopping, and internet purchases. Tobacco manufacturers can also engage in tax avoidance by changing their products with the objective to reduce their tax liability.

Unlike tax avoidance that involves legal activities aimed at reducing the amount of taxes paid, **tax evasion** involves illegal methods of avoiding tobacco taxes. Such illegal activities include illicit trade or production of genuine or counterfeit tobacco products.

**Tobacco tax avoidance and evasion pose many challenges to tobacco control efforts, including:**<sup>13, 14</sup>

- Inexpensive tobacco products undermine tobacco control policies aimed at making tobacco products less affordable
- Tax-evaded cigarettes may be sold in packaging that does not contain required health warnings and information on toxic emissions
- Tax avoidance and evasion decrease government revenue available for health and social programs and can result in increased criminal justice expenditures
- Tax avoidance and evasion can provide unmonitored access to cigarettes by youth

## CIGARETTE AFFORDABILITY

While tobacco taxes are an essential component of tobacco control strategies, they will not have the desired effect on tobacco use if only absolute price is taken into account and not the affordability of tobacco products.<sup>5</sup>

Cigarette affordability is basically the quantity of resources required to buy a pack of cigarettes, and is influenced by both an individual's income and the price of the product.<sup>15</sup>

Even though the price of cigarettes may be higher in high-income countries, cigarettes are often more affordable in these countries compared to low- and middle-income countries, due to differences in income available to purchase cigarettes.<sup>16</sup> As income increases in certain countries, cigarettes may become more affordable over time if cigarette prices do not increase accordingly.

Blecher and van Walbeek<sup>15, 16</sup> have found that affordability of cigarettes has generally declined in high-income countries over the last couple of decades, whereas affordability has generally increased in low- and lower middle-income countries because tax and price increases in these countries have not been high enough to offset increases in incomes.

Governments must therefore ensure that excise taxes on tobacco products are implemented and adjusted in such a way to prevent cigarettes from becoming more affordable over time (taking into account increasing inflation rates and income growth).

“Well over 100 studies,  
including a growing  
number from low-income and  
middle-income  
countries, clearly  
demonstrate that tobacco  
excise taxes are a powerful  
tool for reducing  
tobacco use while at the  
same time providing a  
reliable source of  
government revenues.”

Frank J. Chaloupka, University of Illinois at Chicago  
Ayda Yurekli, World Health Organization  
Geoffrey T. Fong, University of Waterloo<sup>7</sup>

# ITC SURVEY METHODS AND MEASUREMENTS

## ITC Survey Questions on Price and Tax

All ITC surveys are developed using the same conceptual framework and methods, and the survey questions are designed to be identical or functionally equivalent in order to allow strong comparisons across countries. Types of tobacco taxes and the way they are implemented vary considerably across countries. The use of standardized methods and measures across all ITC surveys ensures that the effectiveness of price and tax and other policies can be compared across countries in order to provide guidance on best practices in tobacco control.

The ITC survey includes a broad set of questions to assess price and tax effectiveness, including cigarette brand choice and purchasing behavior, measures of affordability and opportunity cost of tobacco, price as a motivation for quitting, and tax avoidance behavior. These questions are designed to measure the effects of tax and price increases on consumer behavior, such as motivating smokers to reduce consumption or think about quitting, as well as compensatory behavior to minimize costs and avoid taxes.

The following ITC survey questions designed to measure price and tax effectiveness are asked in almost all ITC countries, and data from these measures are presented in the graphs in this report:

Question	Response Options
<b>Do you now smoke packet/factory-made cigarettes only, roll-your-own cigarettes only, or both?</b>	Packet/factory-made; roll-your-own; both
<b>Did you buy these cigarettes by the carton, the pack, or as single cigarettes?</b>	Carton; pack; single (loose)
<b>In the last month, how often, if at all, did you think about the money you spend on cigarettes?</b>	Scale of 1 to 5 (“never” to “very often”)
<b>In the last 6 months, has there been a time when the money you spent on cigarettes resulted in not having enough money for household essentials such as food?</b>	Yes or No

## Measures of Tax Avoidance/Evasion

Data from ITC surveys can be used to estimate the extent and the type of tax avoidance/evasion between countries and across time. In many countries, information about the source of a smoker’s last or usual purchase of cigarettes can provide key tax avoidance/evasion information. Self-reported packaging information, or similar information gathered by the interviewers during face-to-face interviews can also provide key insights into tax avoidance/evasion behaviors. Examples include non-standard or missing health warnings, tax stamps, or authenticity labels.

### Specific measures that are presented in this report include:

#### Tax Avoidance:

Where did you last buy [cigarettes/ roll-your-own tobacco] for yourself?

Response options tailored to each country (up to 15 options), including tax avoidance sources (e.g., First Nations reservations, duty-free shop, outside of the country/state, through the internet or phone from an independent seller)

#### Tax Evasion:

In some countries, we ask respondents to show a pack of the brand that they are currently smoking. The interviewer records whether an official excise tax stamp is visible on the pack, and whether there is a health warning label on the pack (either a country-specific warning or an international warning). When a pack is not available, we obtain the relevant information via self-report.



# Measures of Cigarette Affordability

An **affordability index** was constructed based on a cigarette price (per dose) to daily income ratio (CPDIR). CPDIR can be interpreted as the percentage of daily income spent on an average dose of cigarettes for smokers.

**CPDIR = Price per daily cigarette dose / Daily income**

**Lower** values of CPDIR indicate **higher** affordability: the smoker's daily number of cigarettes can be purchased for a lower percentage of his or her daily income. This measure of affordability has been used by a number of researchers.

We have found it useful to define **Affordability Index** as the reciprocal of CPDIR:

**Affordability Index = Daily income / Price per daily cigarette dose**

Higher values of the Affordability Index are associated with higher affordability of cigarettes.

**Daily income:** All respondents were asked for their monthly or annual household income, which is collected as a categorical variable in all ITC surveys except Malaysia and Thailand. Income was converted to a continuous measure then divided by 30.4 (for monthly income) or 365.24 (for annual income) to obtain a measure of daily income.

**Price per daily cigarette dose:** Cigarette prices were based on the price paid for the most recent purchase (carton, pack, or single/loose). All prices were computed as price per stick and then converted to a price per daily dose, based on the average number of cigarettes individuals reported smoking per day. Cigarette prices are based on prices reported for manufactured cigarettes only.

## Methods for Cross-Country Comparisons

The graphs in this report present *initial* results from cross-country comparisons of ITC surveys conducted in each of the 19 countries. These results are meant to be qualitative descriptions. More formal statistical tests will be conducted for scientific publications, presentations, and reports arising from the cross-country comparison data.

The percentages presented in the graphs were estimated from regression models that control for potential differences across countries in age, smoking status, and the number of times respondents were surveyed in each of the countries. The estimates for tax avoidance/evasion were weighted using cross-sectional weights. The percentages also take into account the different sampling designs used in each of the countries. The data on cigarette affordability presents changes in affordability from the first ITC survey to the most recent wave in each country.

The results presented in this report come from the most recent wave of ITC surveys of smokers conducted in 19 countries, with the year of the survey given after the country name.

### Additional Notes:

- Across the 19 ITC countries, there are considerable differences in prevalence of smoking among women. In non-Asian countries, female prevalence is often fairly close to that of males. But in the Asian countries, the female prevalence rate is much lower than that of males. Although in many of these countries women smokers were oversampled, the resulting sample size of women in Asian countries is still much lower than for men and too low for meaningful estimates. Thus, the graphs present ITC results in the Asian countries for male smokers only, whereas for the non-Asian countries, results are presented for males only and also for male and female smokers combined.
- In each graph, countries are presented in order of GDP per capita, from highest to lowest. They are also colour coded according to three World Bank income classifications: High Income, Middle Income, and Low Income.



# PRICE AND TAX IN ITC COUNTRIES

This table presents information on the price and tax of the most sold brand of cigarettes in 18 ITC countries. All data are from the WHO report on the global tobacco epidemic, 2011: Warning about the dangers of tobacco, for which data was collected up to December 2010.

Country	Price of Most Sold Brand, Pack of 20 Cigarettes (Country's Currency)	Price of Most Sold Brand (US\$)	Total Taxes on Most Sold Brand (% of Retail Price)			
			Total taxes	Total excise tax (specific & ad valorem)	Value added tax (VAT)	Other taxes
≤ 50% of retail price is tax						
China (Mainland)	5.00 (CNY)	0.74	41%	26%	15%	—
United States	5.72 (USD)*	5.72	45%	40%	5%	—
51-75% of retail price is tax						
Malaysia	10.00 (MYR)	3.14	52%	48%	5%	—
Brazil	3.25 (BRL)	1.84	60%	26%	25%	9%
South Korea	2500.00 (KRW)	2.11	62%	53%	9%	—
Mexico	30.00 (MXM)	2.37	63%	49%	14%	—
Australia	11.98 (AUD)	10.77	64%	55%	9%	—
Canada	8.07 (CAD)*	7.84	67%	58%	9%	—
Bangladesh	33.00 (BDT)	0.48	68%	53%	15%	—
Thailand	58.00 (THB)	1.80	69%	62%	7%	—
Mauritius	75.00 (MUR)	2.48	72%	59%	13%	—
New Zealand	11.30 (NZD)	8.19	72%	61%	11%	—
Uruguay	70.00 (UYU)	3.32	72%	54%	18%	—
Netherlands	5.05 (EUR)	6.58	73%	57%	16%	—
Germany	4.96 (EUR)	6.45	74%	58%	16%	—
> 75% of retail price is tax						
United Kingdom	6.29 (GBP)	9.80	77%	62%	15%	—
Ireland	8.55 (EUR)	11.14	79%	61%	17%	—
France	5.60 (EUR)	7.30	80%	64%	16%	—

**Notes:** \*The price is a sales-weighted average of State/region prices for most sold brand.

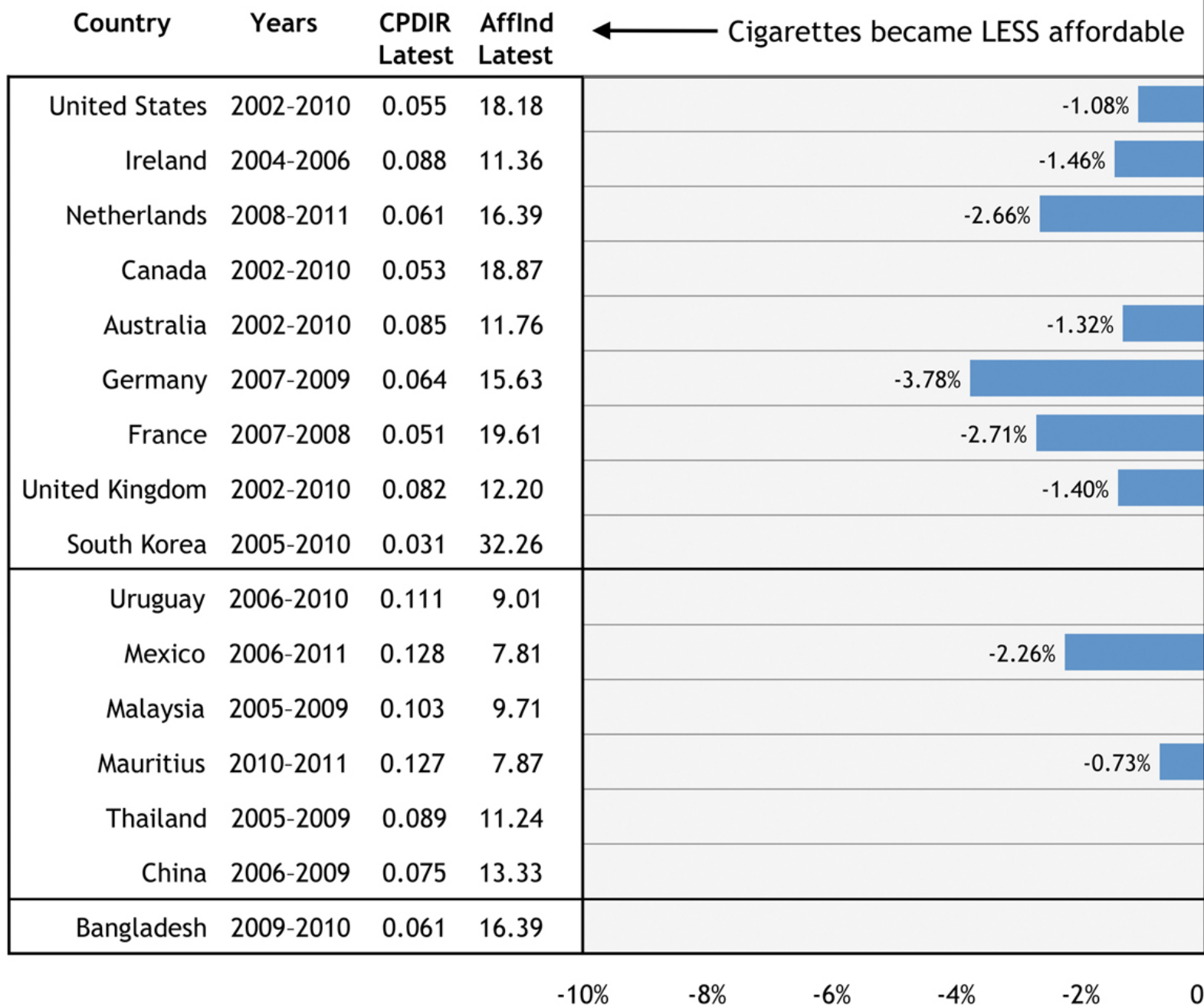
Data for Scotland was not available.

Individual categories of tax may not add to total taxes due to rounding.

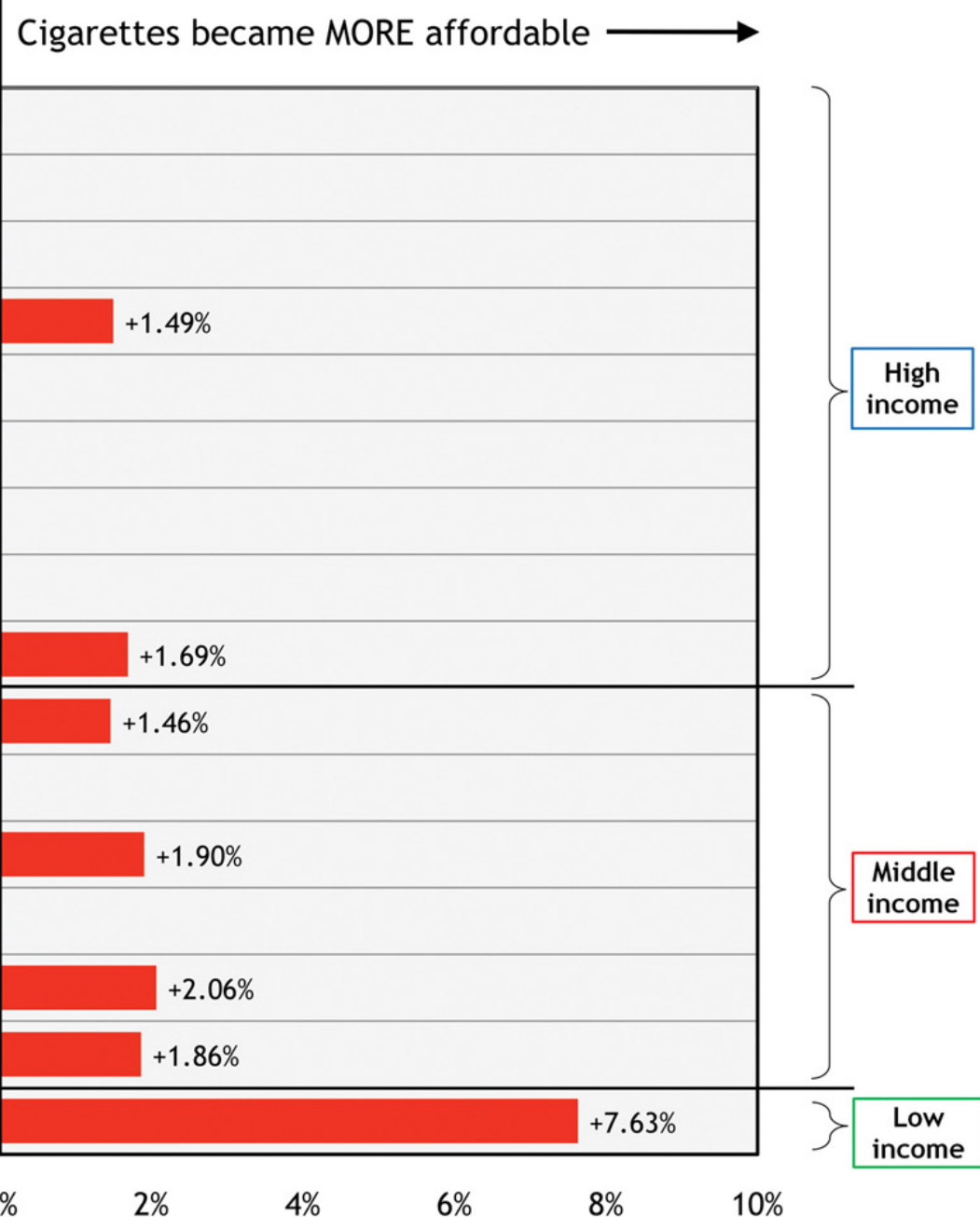
# CROSS-COUNTRY COMPARISON GRAPHS

## Cigarette Affordability (Male Smokers)

Figure 1. Affordability of Cigarettes and Change in Affordability Per Year



**Figure 1 presents for 16 ITC countries:** (a) the year of the first survey wave and of the most recent survey wave, (b) **CPDIR Latest:** the CPDIR (cigarettes per day / income per day) at the most recent survey wave, (c) **AffInd Latest:** the Affordability Index (the reciprocal of CPDIR) for the most recent wave.\*



\* Change in Affordability Index per year =  $(\text{AffInd}_{\text{Most Recent}} - \text{AffInd}_{\text{First}}) / [(\text{Difference in days between Date of Survey}_{\text{First}} \text{ fieldwork at the } 1/3 \text{ timepoint of the survey interviewing period and Date of Survey}_{\text{Most Recent}} \text{ fieldwork at the } 1/3 \text{ timepoint of the survey interviewing period}) / 365]$ . The date corresponding to 1/3 of the survey interviewing period was chosen because it was the approximate point at which 50% of the respondents had been interviewed for that survey wave in each country.

The general pattern of affordability across countries and over time is consistent with past studies of affordability (e.g., Blecher and van Walbeek):<sup>15, 16</sup>

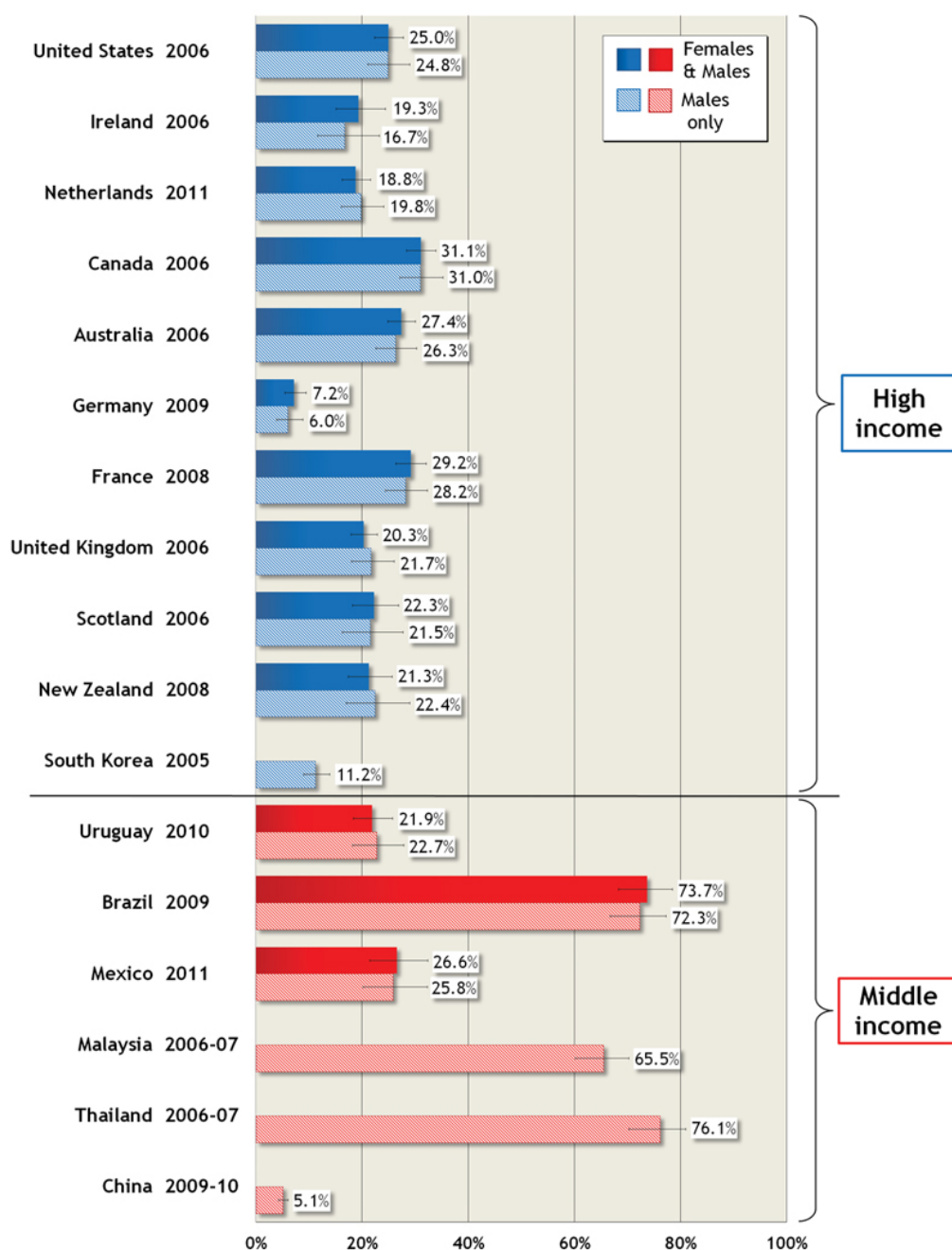
Affordability is generally decreasing in high-income countries where income growth has been slow/stagnant for many years and where governments have been more aggressive in using tax increases to curb tobacco use.

Affordability is generally increasing in low- and middle-income countries where income growth has been relatively rapid and most governments have not adopted significant tax increases to curb tobacco use.

Increasing taxes and prices beyond income growth is essential for reducing the affordability of cigarettes and for curbing tobacco use and its consequences, particularly in low- and middle-income countries where affordability has been increasing and incomes are growing relatively rapidly.

## Spent Money on Cigarettes Instead of Essentials

Figure 2. Percentage of smokers who spent money on cigarettes instead of household essentials, such as food, in the last 6 months, by country



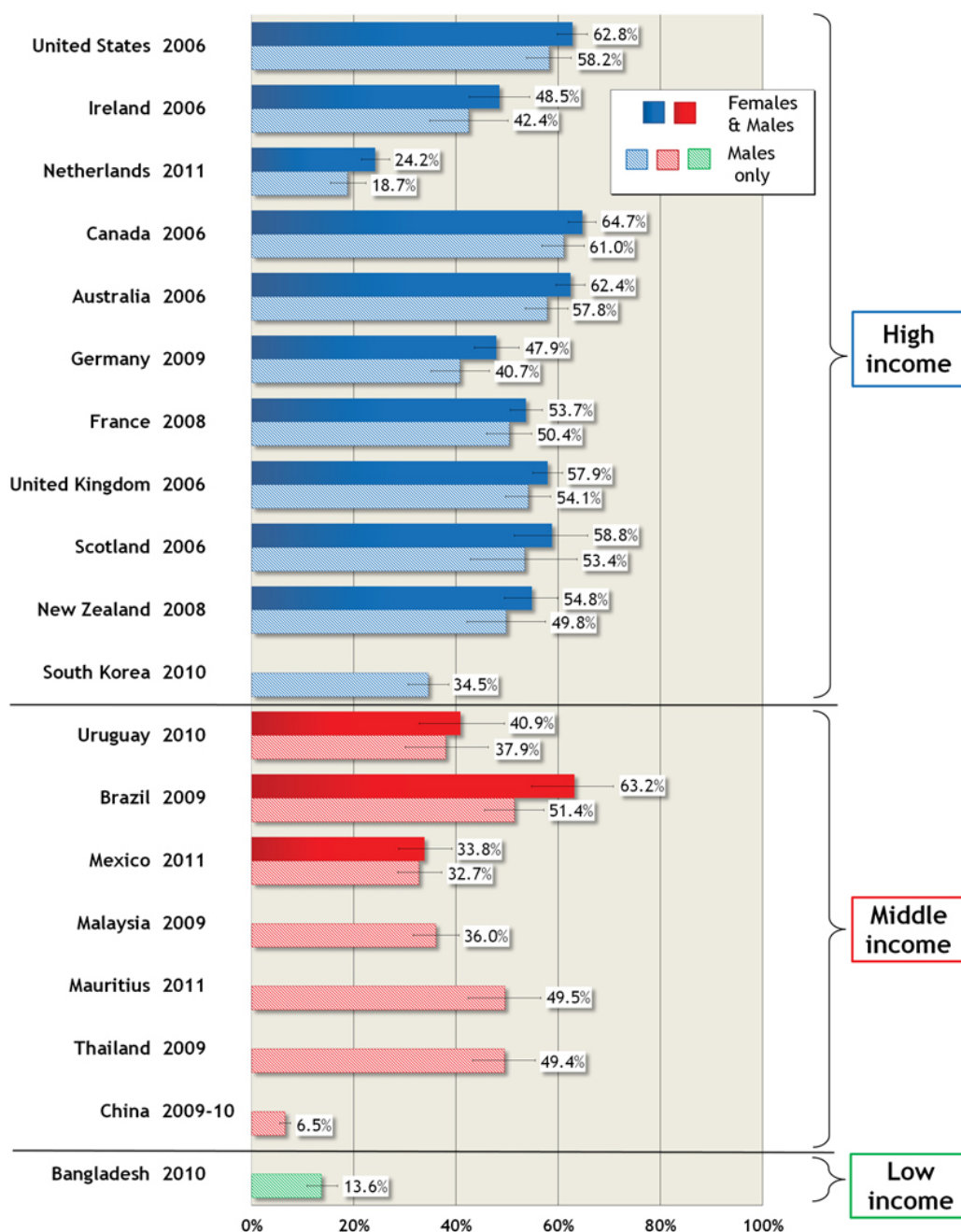
The percentage of smokers who reported spending money on cigarettes instead of household essentials in the last 6 months was highest in Thailand and Brazil, and lowest in China and Germany.

In 3 of the 6 middle income countries surveyed, the majority of smokers reported spending money on cigarettes instead of household essentials like food.



# Think About Money Spent on Cigarettes

Figure 3. Percentage of smokers who thought “often” or “very often” about the money they spent on smoking in the last month, by country



The percentage of smokers who thought often about the money they spent on cigarettes was highest in Canada, US, Brazil, and Australia, and lowest in China.

Of the 11 high-income countries surveyed, the Netherlands had the lowest proportion of smokers who thought often about the money they spent on cigarettes.

Of the 8 low- and middle-income countries surveyed, only Brazil had over half of smokers think about their money spent on cigarettes.

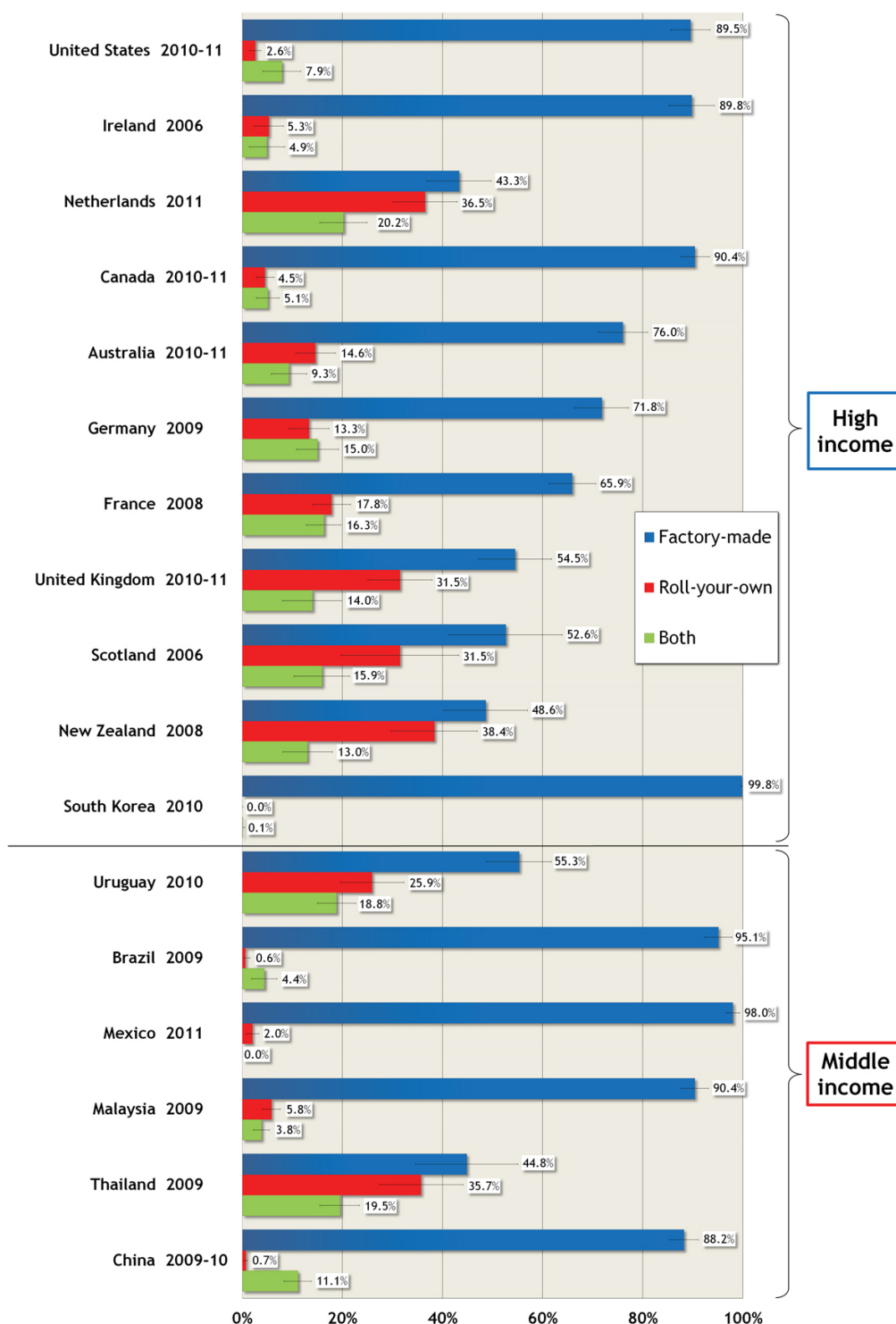
The percentage of roll-your-own cigarette use is an indicator of the extent to which smokers are using cheaper forms of tobacco as a method for paying less. Note that roll-your-own markets are not equally developed in all countries.

The majority of smokers in every country smoke factory-made cigarettes. The percentage of smokers who currently smoke only roll-your-own cigarettes was highest in New Zealand, followed by the Netherlands and Thailand.

Almost no smokers in South Korea smoke roll-your-own cigarettes. The percentage of smokers smoking only roll-your-own cigarettes was also very low ( $\leq 2\%$ ) in Brazil, Mexico, and China.

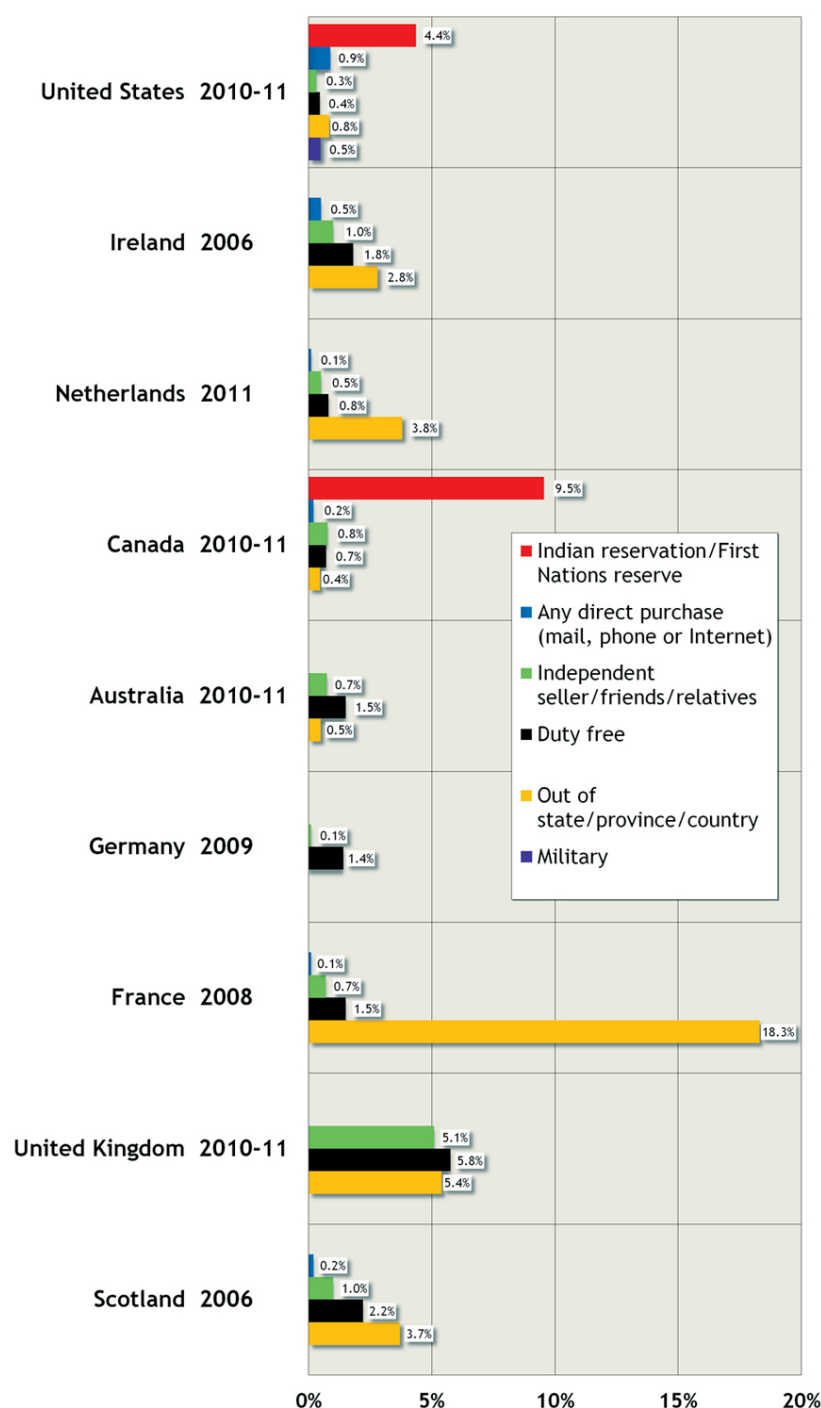
## Factory-made vs. Roll-your-own Cigarettes

Figure 4. Percentage of smokers who smoke factory-made cigarettes, roll-your-own cigarettes or both types of cigarettes, by country



## Specific Tax Avoiding Sources for Last Purchase At Most Recent Wave

Figure 5. Percentage of ITC smokers reporting purchasing cigarettes from specific tax avoiding sources at last purchase, at most recent wave



NOTE: More detailed analyses in France show that out-of-country purchases by smokers were much more likely to occur in the regions of France that border other countries.

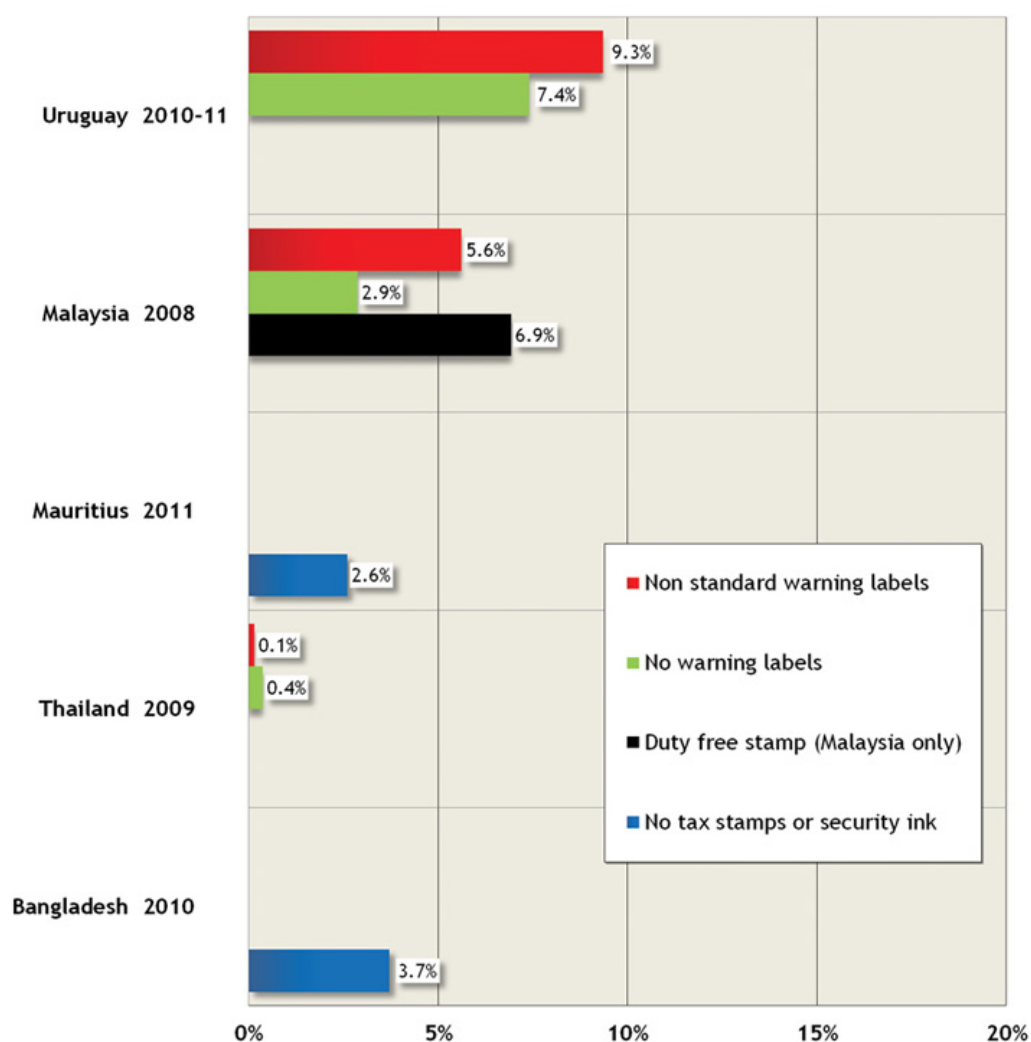
In the US and Canada, the major source of low/untaxed cigarettes was Indian reservations/First Nations reserves.

The highest percentage of buying out of state/country was in France, where 18% of smokers reported purchasing their last cigarettes outside of the country.

The highest percentages of buying cigarettes from independent sellers and from duty-free were in the UK.

## Possible Tax Avoidance/Tax Evasion (including possible illicit trade) at Most Recent Wave

Figure 6. Percentage of smokers' cigarette packs showing evidence of possible tax avoidance/evasion including illicit trade in ITC low-and-middle-income countries, at most recent wave



**NOTE:** In Malaysia, inspection of packs allowed for identifying tax avoidance/evasion from non-standard warning labels, no warning labels, and the presence of a duty-free stamp. However, it was not possible to use the absence of tax stamps or security ink to identify packs that may have been illicit. In Malaysia, tax stamps on all foreign brands and on many domestic brands can only be seen under ultraviolet (UV) light. Because the interviewers did not have UV lamps, the data on the absence of tax stamps in Malaysia is not indicative of illicit packs and thus is not presented in the above Figure.

In certain ITC countries where smokers are asked to show a pack of cigarettes that they are currently smoking (or provide information about the pack by self-report), there is some evidence of tax avoidance / evasion.

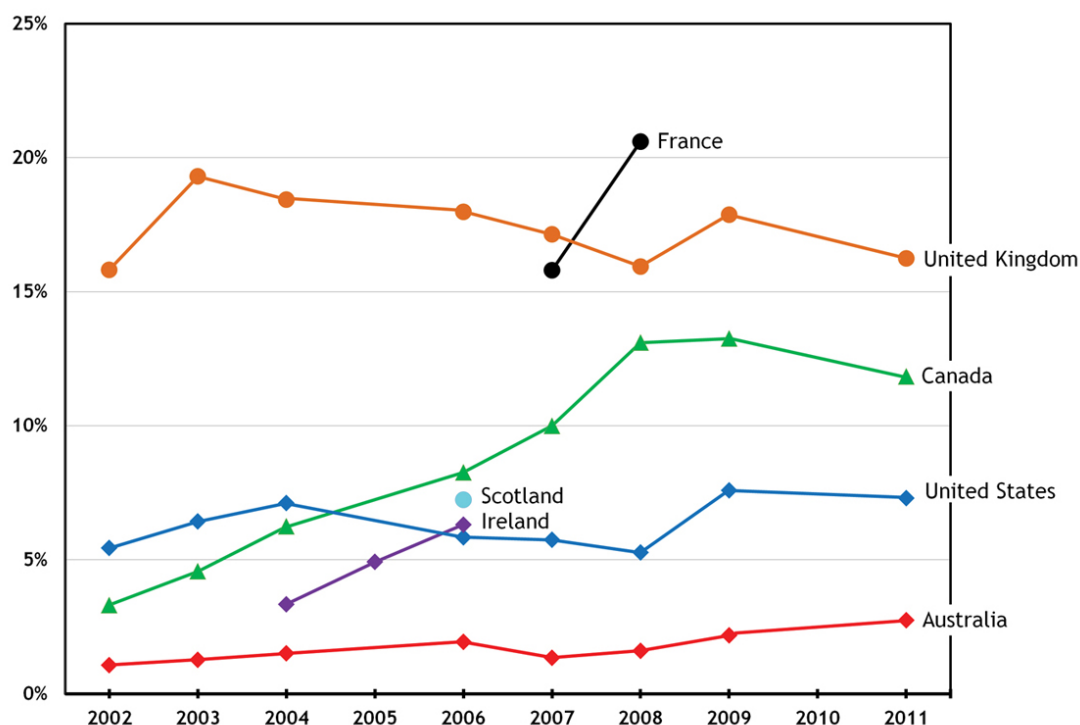
Packs in Uruguay and Malaysia had the highest levels of non-standard or no warning labels.

Packs in Thailand appeared to have the least amount of evidence of tax avoidance / evasion.



# Purchased Cigarettes from Tax Avoidance/Evading Sources Over Time

Figure 7. Percentage of ITC smokers reporting purchasing cigarettes from tax avoidance/evading sources at last purchase, 2002-2011



**NOTES:** All country data represent combined totals of the following sources: out of country/state, duty-free, direct purchase, independent sales, and refused/don't know/other.

Canada and United States include Indian Reservations/First Nations Reserves, and military.

Inspection of the pattern of tax avoidance in France shows that it was almost entirely due to smokers in border regions purchasing their cigarettes from the bordering countries.

Estimates of tax avoidance/evasion based on respondents' self-reported source of their last purchase of cigarettes vary substantially between countries and across time within countries.

Tax avoidance and evasion behavior was highest in the UK and France and lowest in Australia.

In Canada, the percentage of smokers reporting buying cigarettes from tax avoidance sources increased more than four-fold between 2002 and 2009. This was due almost entirely to an increase in purchasing on First Nations reservations, and most of it was driven by purchases within the province of Ontario.

# Summary

- Increasing tobacco taxes and prices (in a way that makes tobacco products less affordable to consumers) is the most effective tobacco control measure.
- In line with previous global research on cigarette affordability, affordability increased from the first to the last survey wave in all of the low- and middle-income countries except for Mexico and Mauritius, and decreased in all of the high-income countries except for Canada and South Korea. These trends are important because they imply that cigarette taxes and prices in low- and middle-income countries are not increasing enough to correspond with increases in income.
- Many smokers in both high-income and low- and middle-income countries (especially in the Netherlands and Thailand) smoke roll-your-own cigarettes. The lower tax rate on roll-your-own cigarettes undermines tobacco control policies aimed at making cigarettes less affordable.
- Tax avoidance and evasion behavior was highest in the United Kingdom, where smokers purchased cigarettes from independent sellers, duty-free, and out of country sources, and lowest in Australia (which is not surprising given the fact that Australia is an island and there are limited price differentials between states). Tax avoidance and evasion not only reduces the impact of tobacco tax policies but also reduces government revenue from taxes.
- In several countries, smokers' cigarette packs showed evidence of tax avoidance/ tax evasion because of deviation in warnings or absence of tax stamps and/or presence of duty-free stamps.

## Future Directions

The ITC Project is currently working on several studies on the impact of price and tax on tobacco use. A number of studies are focused on cigarette price and tax in China where research is examining the impact of purchasing behavior on cigarette prices and cigarette consumption, the effect of cigarette prices on brand switching, and factors associated with purchasing cheaper cigarettes. Another study is examining the impact of price changes on cigarette and bidi consumption in Bangladesh. A new study is being planned across 19 ITC countries to examine the extent to which smokers engage in “rational” or coherent planning regarding their expectations of future cigarette price levels and their future levels of smoking.

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## FUTURE DIRECTIONS

The ITC Project continues to explore opportunities for collaborating with low- and middle-income countries to help policy makers design, implement, and evaluate FCTC policies.

## THE ITC RESEARCH TEAM

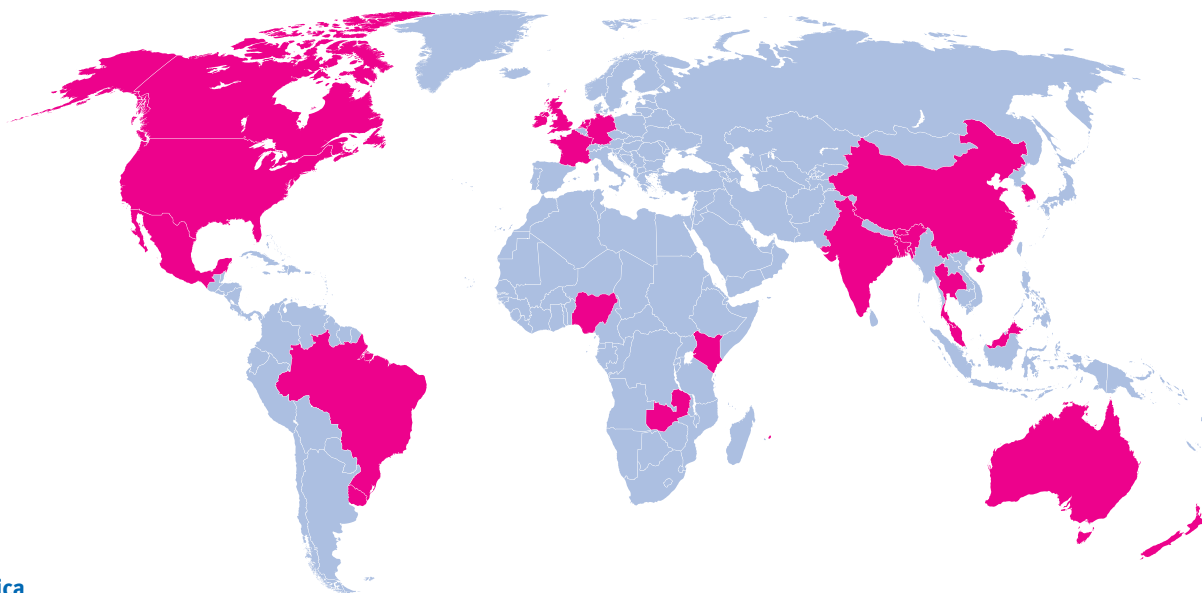
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## THE ITC PROJECT: EVALUATING THE IMPACT OF FCTC POLICIES IN...

**23 countries • 50% of the world's population • 60% of the world's smokers • 70% of the world's tobacco users**

Australia  
Bangladesh  
Bhutan  
Brazil  
Canada  
China (Mainland)  
France  
Germany  
India  
Ireland  
Kenya  
Malaysia  
Mauritius  
Mexico  
Netherlands  
New Zealand  
Nigeria  
South Korea  
Thailand  
United Kingdom  
Uruguay  
United States of America  
Zambia



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