

Economic Research on Tobacco — Tax Avoidance & Evasion

Frank J. Chaloupka

Chair, WHO Collaborating Centre on the Economics of Tobacco &
Tobacco Control

Distinguished Professor, University of Illinois at Chicago

Symposium on the Economics of Tobacco Control
Hacettepe University, Ankara, Turkey

16 April, 2013

Overview

- Definition of terms
- Measurement of tax avoidance and tax evasion
- Determinants of tax avoidance and tax evasion
- Policy responses

Defining Tax Avoidance/Evasion

Tax Avoidance & Evasion

- Many terms used:
 - Illicit trade, contraband, smuggling, bootlegging, counterfeit, etc.
- Tax Avoidance
 - Legal methods for avoiding tobacco taxes
- Tax Evasion
 - Illegal methods for avoiding tobacco taxes

Tax Avoidance & Evasion

- Individual tax avoidance
 - Reservation, Internet and other direct, duty-free, and cross-border purchases
 - Brand/product switching, carton purchases, use of cheaper outlets
- Bootlegging
 - Small scale purchasing of cigarettes in low-tax/price jurisdictions for resale in high tax/price jurisdictions

Tax Avoidance & Evasion

- Large scale, organized smuggling
 - Illegal transportation, distribution and sale of large consignments of tobacco products
 - Generally avoids all taxes
- Counterfeit
 - products bearing a trademark without the approval of the trademark owner
 - Often involved in organized smuggling

Tax Avoidance & Evasion

- Illegal Manufacturing
 - Unreported or under-reported manufacturing, distribution and sale of large consignments of tobacco products
 - Generally avoids all taxes
 - Often involved in organized smuggling
- Brand Repositioning
 - Industry changes in pricing, packaging, product design, etc. that change tax rate applied to product

Measuring Tax Avoidance/Evasion

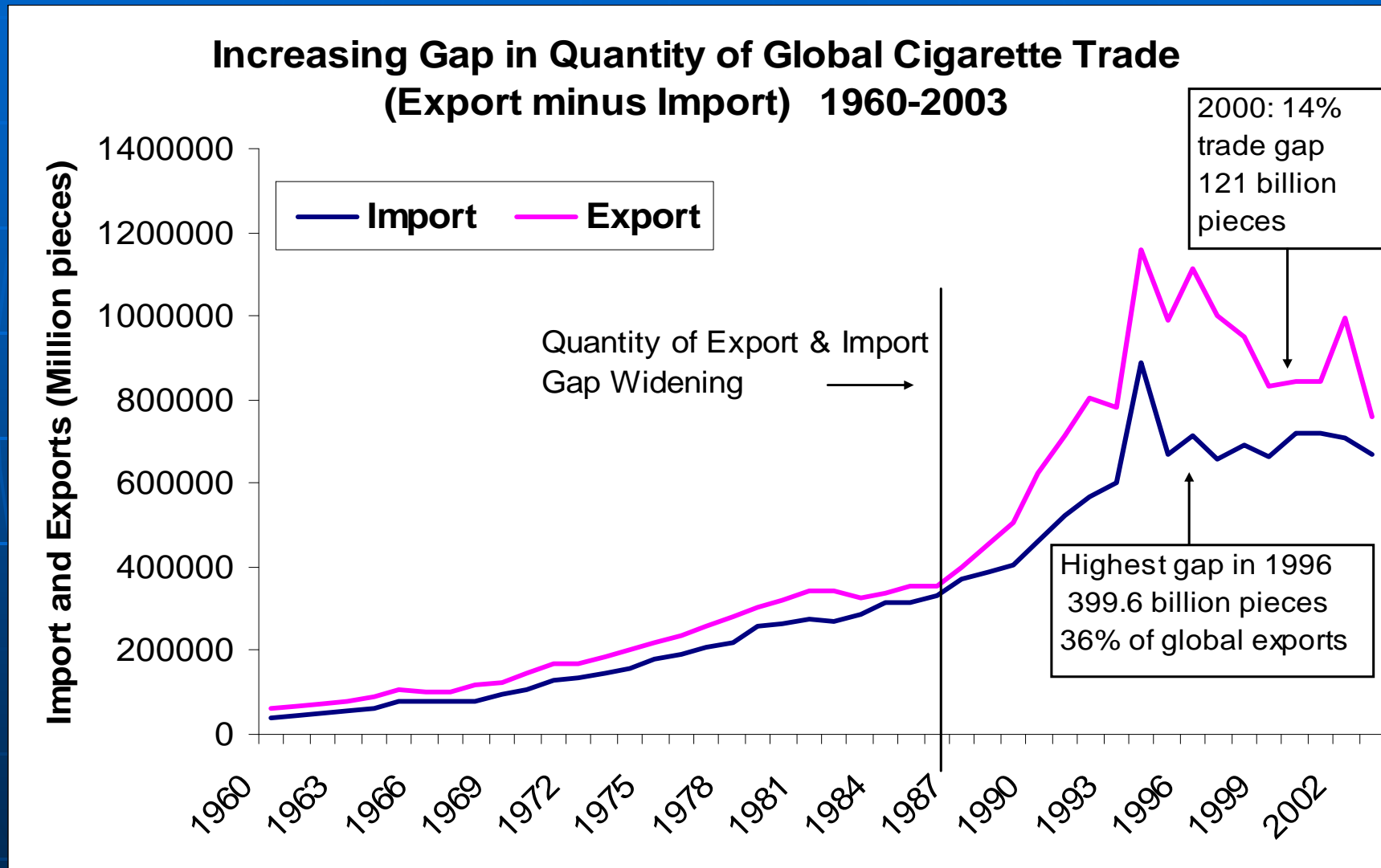
Measuring Avoidance & Evasion

- Difficult to measure given illegality
- Variety of approaches used
 - Each captures different pieces
 - None fully captures all tax avoidance and evasion

Measuring Avoidance & Evasion

- Comparing recorded exports of tobacco products to recorded imports
 - Difference reflects leakage into black markets
 - Recent estimates suggest 20-30 percent of exports do not appear as imports
 - 4-10 percent of global consumption
 - Will be largely organized smuggling

Extent of Illicit Trade



Source: ECOSOC Trade Database: Ayda Yurekli

Measuring Avoidance & Evasion

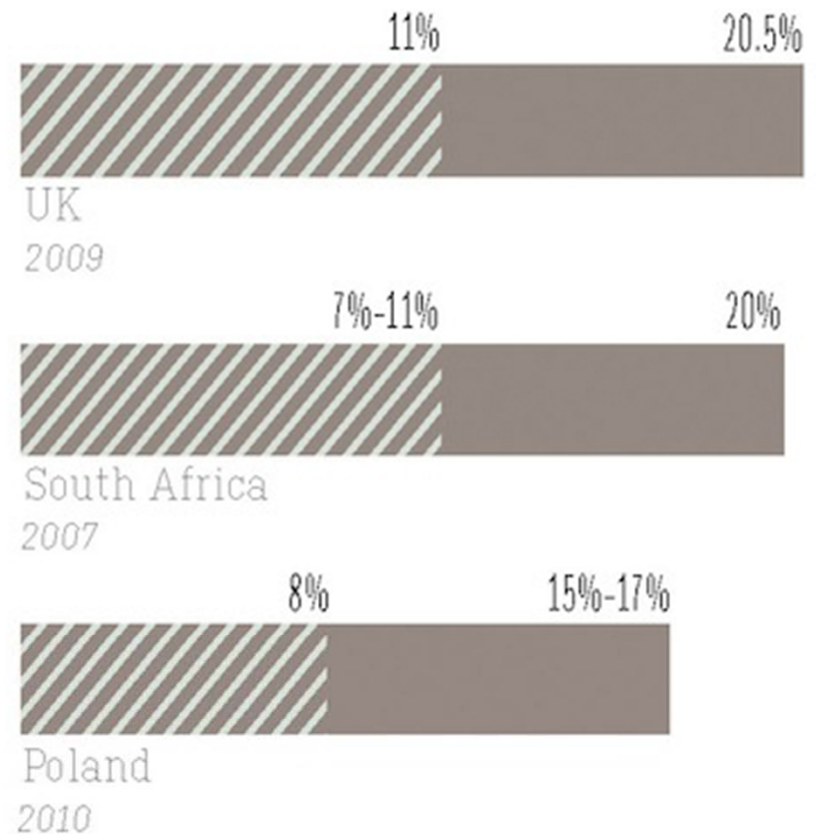
- “Expert Opinions”
 - Customs officials, tobacco industry representatives, tax authorities, and others
 - Potential bias in some sources
 - Widely varying estimates across countries
 - Recent estimates 10-12%
 - Again, largely reflecting organized smuggling

Tax Avoidance and Evasion

The Industry Tends to Exaggerate the Scope of Illicit Trade as a Counterargument Against Tobacco Control Measures

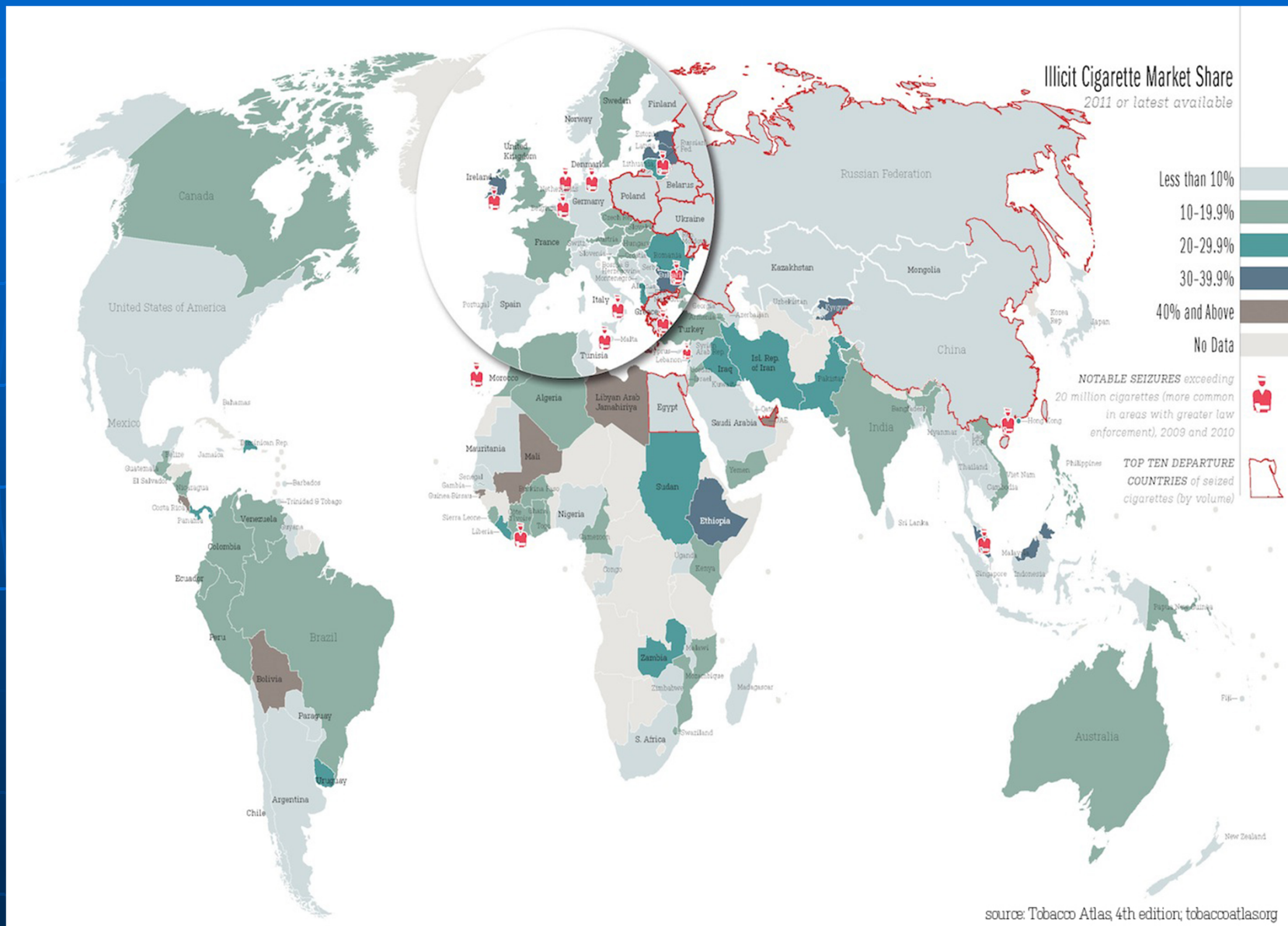
Estimates of illicit cigarette trade from the tobacco industry vs. the estimates from academic studies

As a percent of total consumption



source: Tobacco Atlas, 4th edition; tobaccoatlas.org

Tax Avoidance and Evasion



Source: Tobacco Atlas, 4th edition

Measuring Avoidance & Evasion

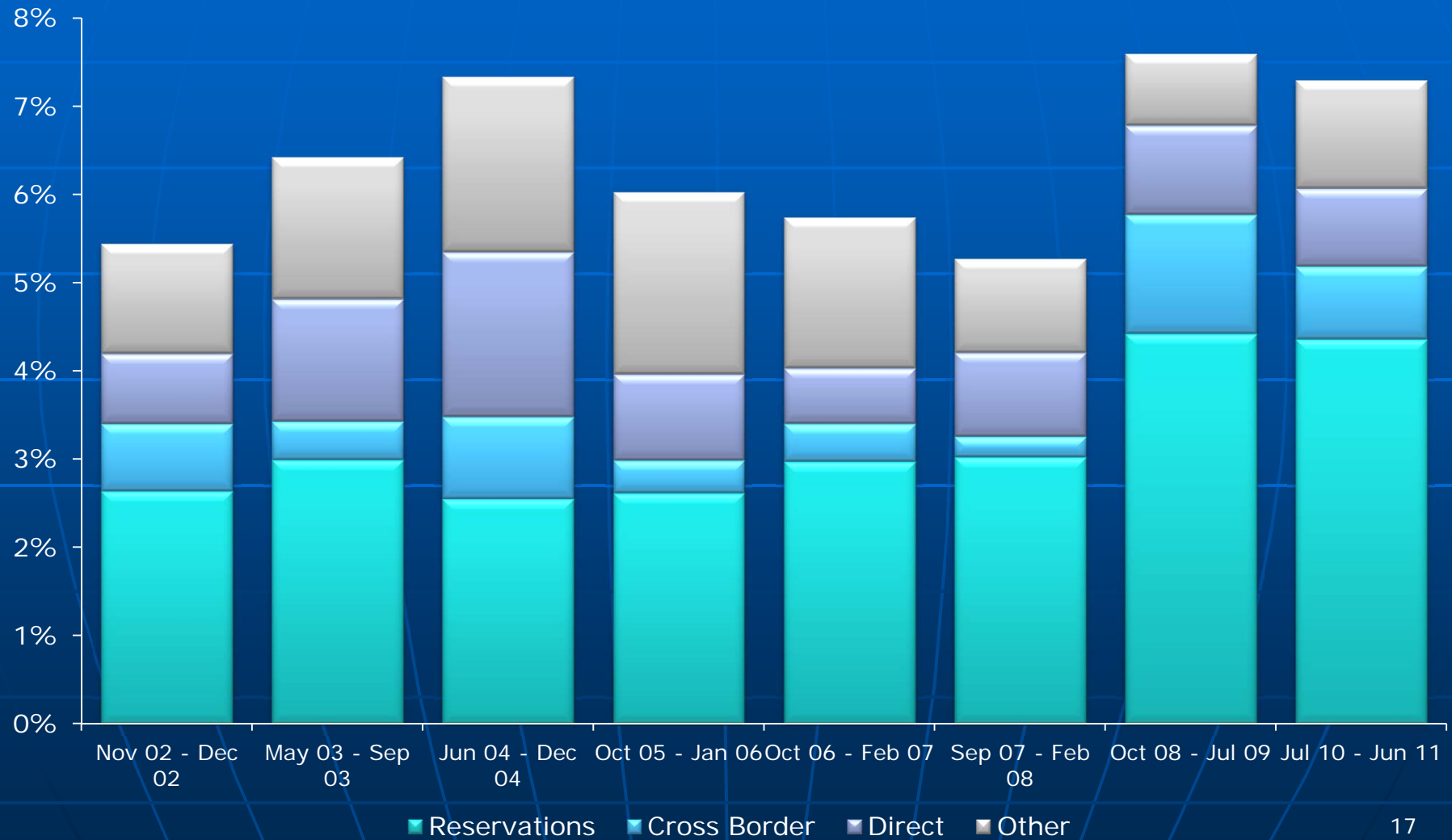
- Individual tax avoidance a bit easier to assess
 - Econometric analyses of tax paid sales that account for various factors, including:
 - tax/price differences
 - population density
 - travel patterns and distance
 - US estimates suggest up to 12.5% of total consumption in early 2000s
 - Western European estimates about 3% of consumption in 1980s/1990s

Extent of Illicit Trade

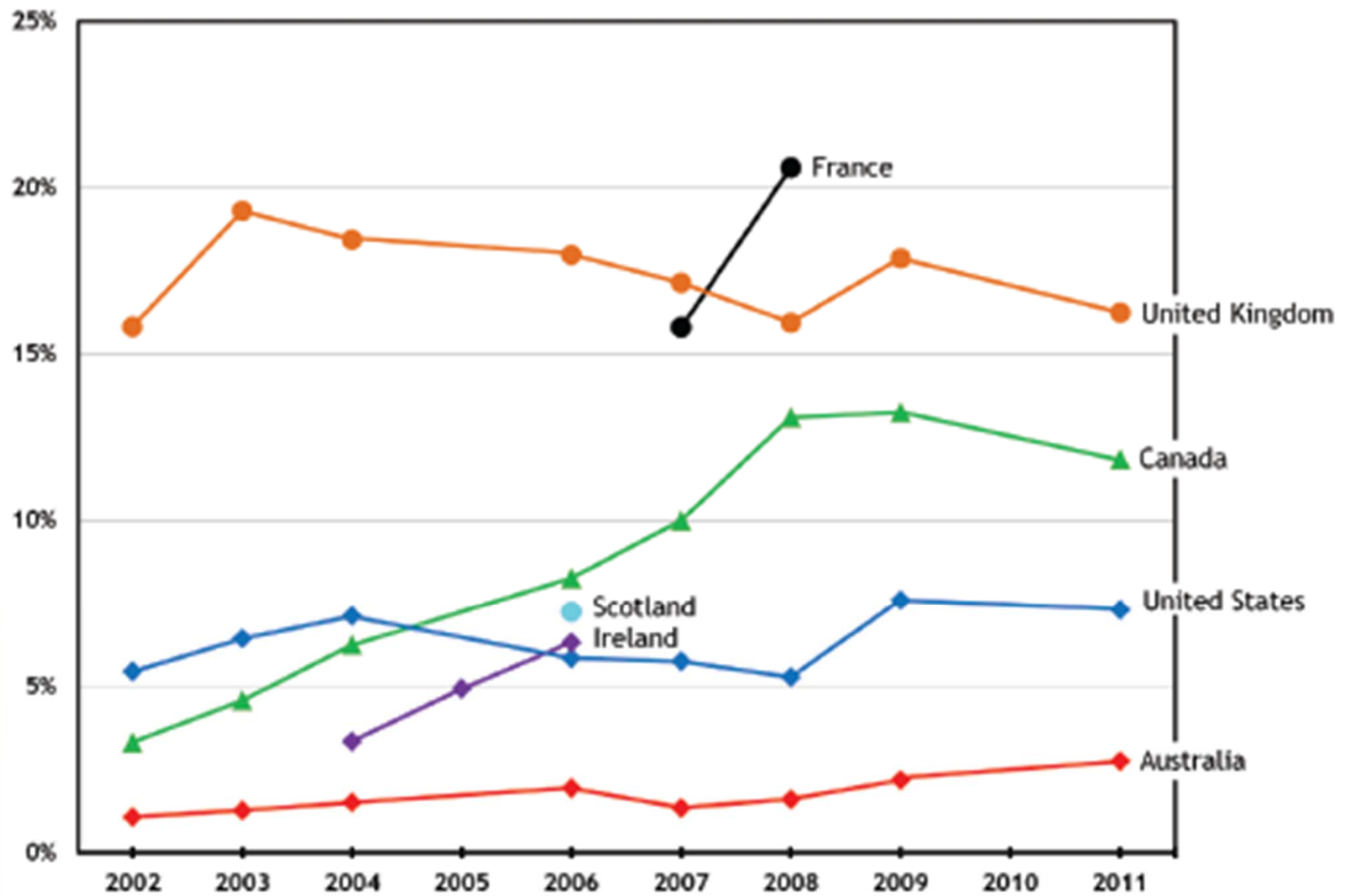
- Individual tax avoidance – self-reported data
 - International Tobacco Control Policy Evaluation Study
 - Longitudinal, annual survey of smokers in numerous countries, including Canada and US
 - Includes questions on purchase locations, including Internet, telephone, cross-border, duty free, reservations, and more

Tax Avoidance

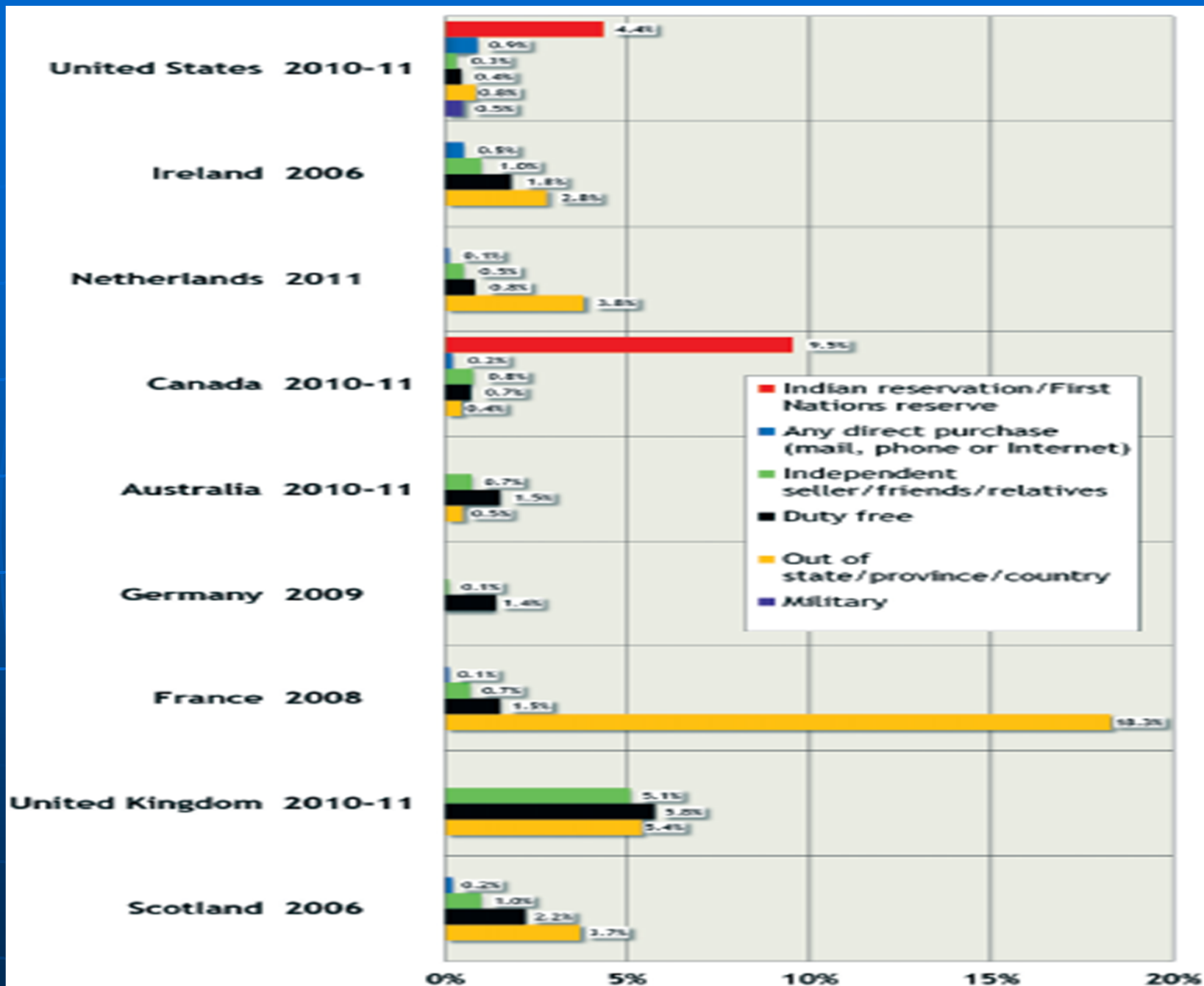
US Smokers, Last Purchase, November 2002-June 2011



Source, ITC project, US survey, Waves 1-8



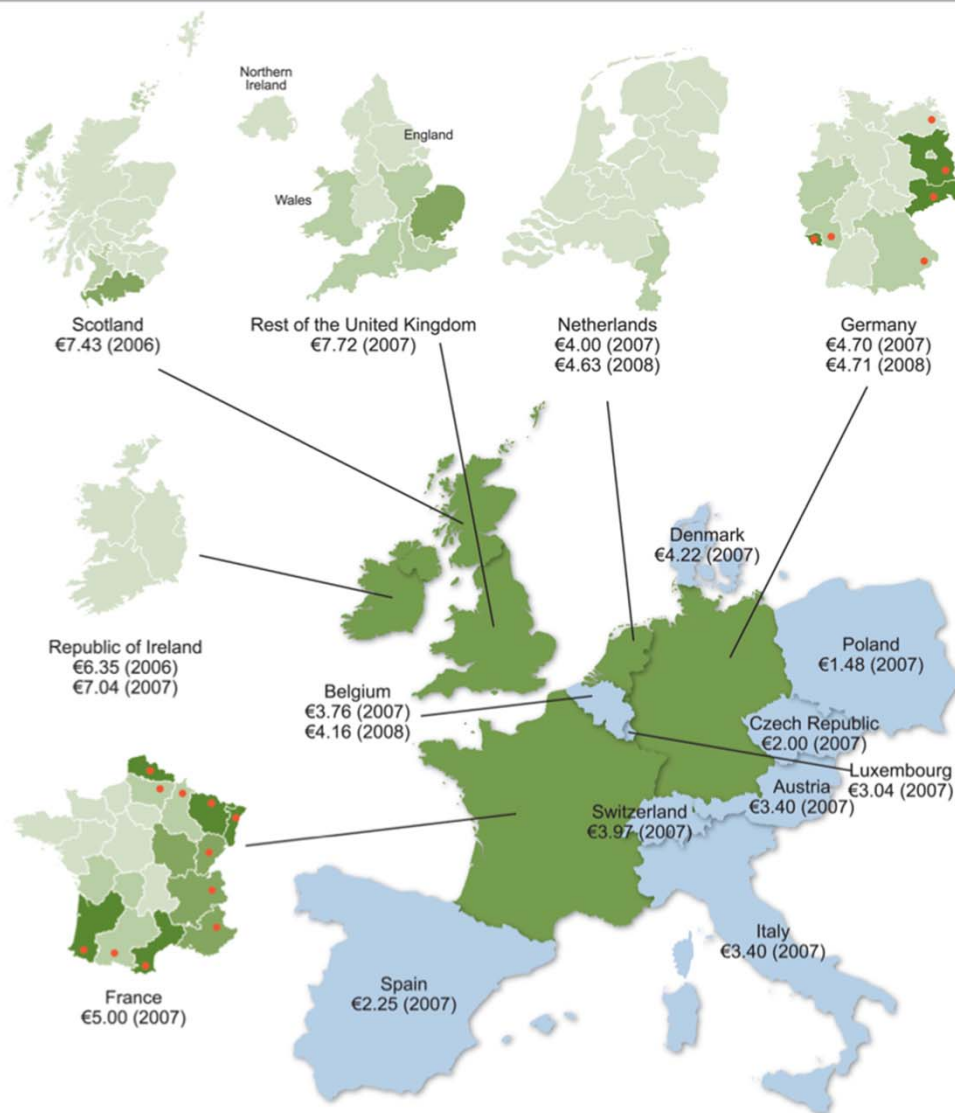
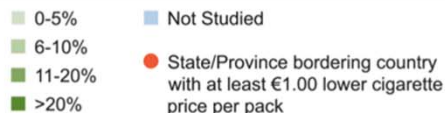
Source, ITC project, various countries, multiple waves



Source, ITC project, various countries, most recent wave

Cross-Border Shopping Among ITC EU Countries

Figure 1: Regional variation in rates of smokers who reported having bought cigarettes frequently outside their country in the last six months.



ITC Europe Surveys: Cross-border purchasing in German states and French provinces

13–24% when bordering
countries with lower prices

2–7% (in these
states/provinces and in UK &
Ireland) when NOT bordering
countries with lower prices.

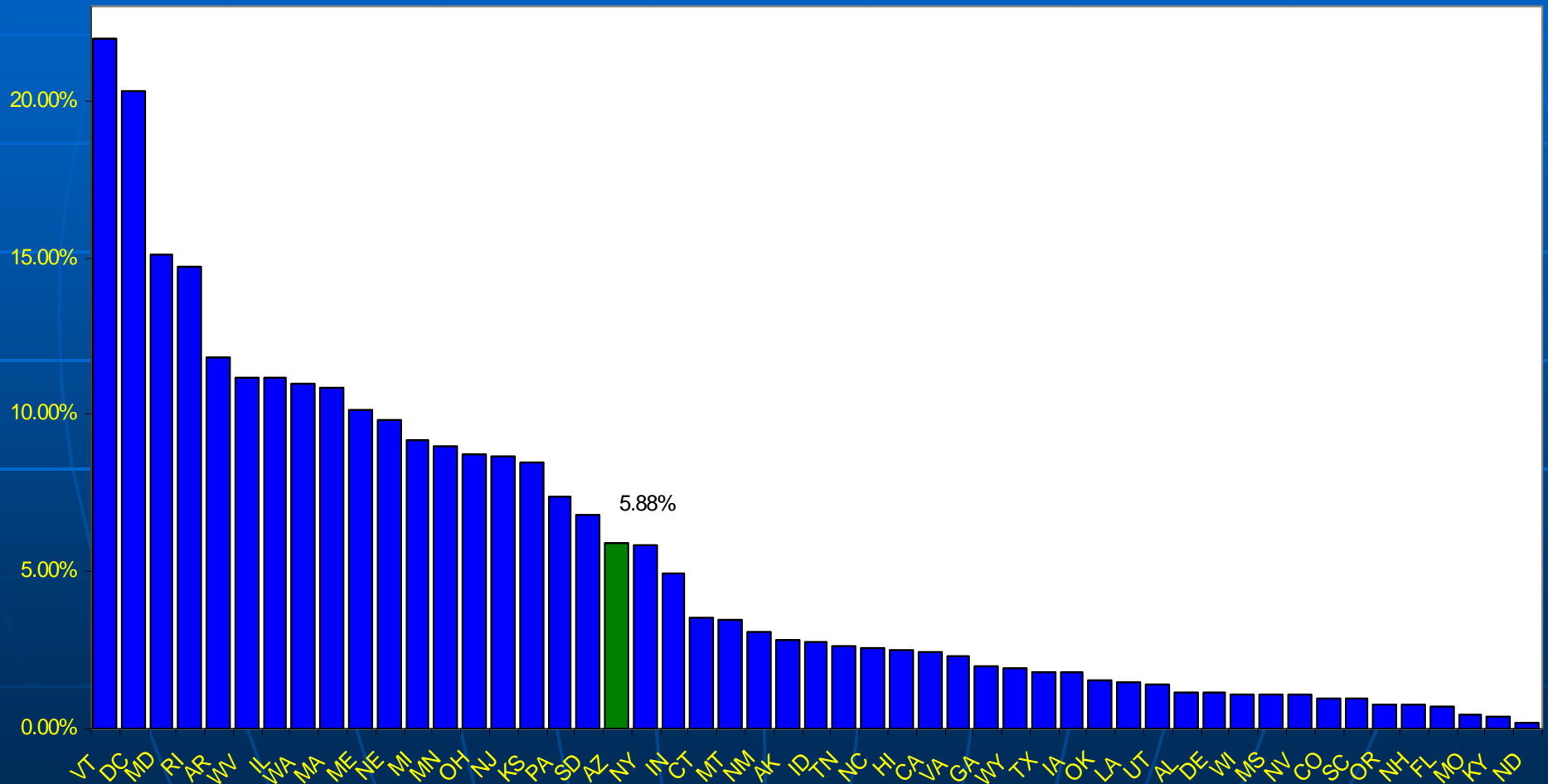
Need to harmonize prices

Extent of Illicit Trade

- Individual tax avoidance – self-reported data
 - Tobacco Use Supplement to the Current Population Survey
 - Periodic state representative, cross-sectional samples
 - Includes questions on price paid, whether or not purchased in own state, other state or through other channels (e.g. Internet or phone) – 2003 and 2006/07 surveys only
 - Did not ask about in-state tax avoidance (e.g. reservation purchases)
 - 2006/07: 5.19%

Tax Avoidance – United States

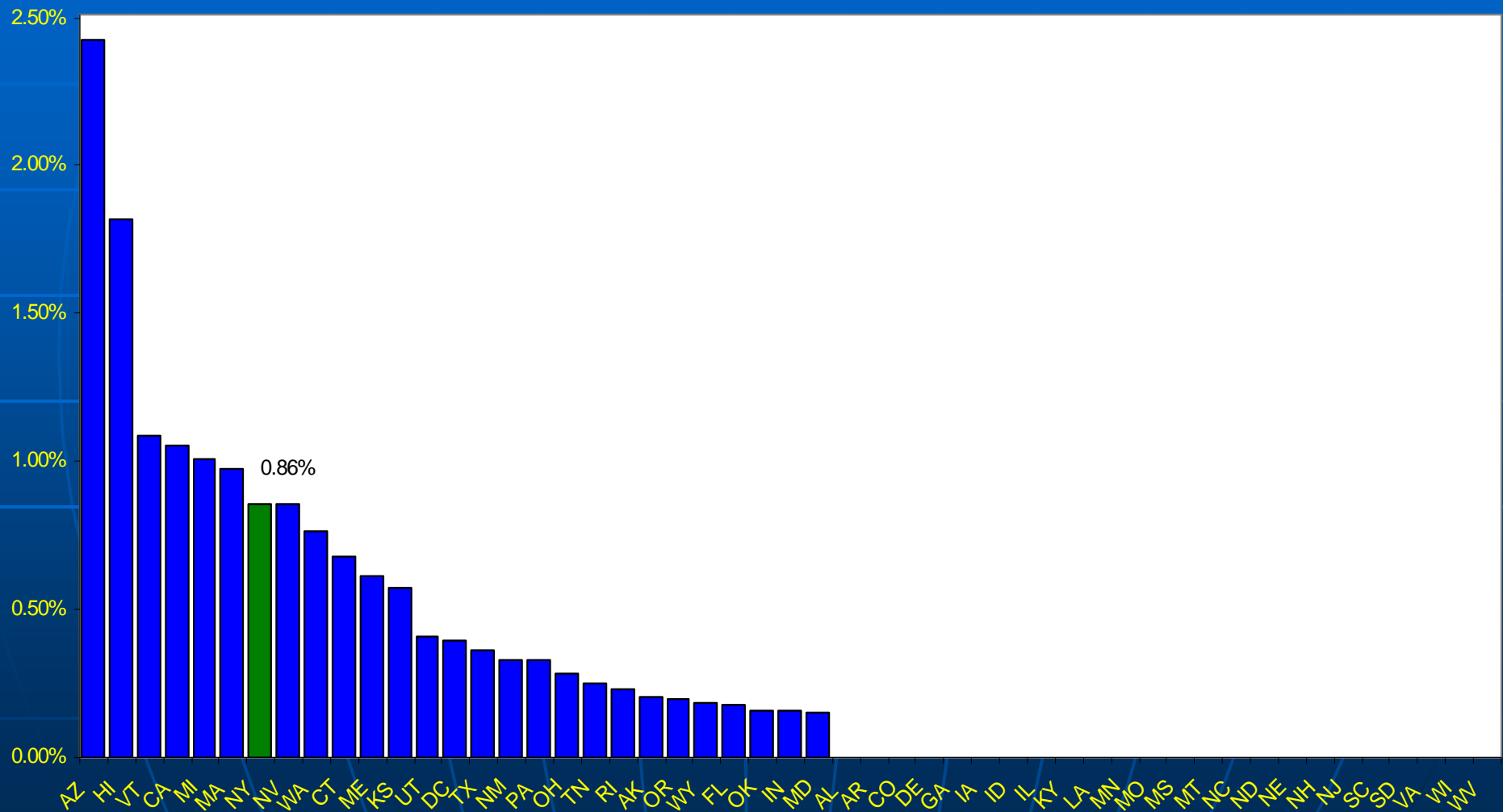
% Tax Avoiders, 2006/07



Source: Tax Burden on Tobacco, 2008 and TUS-CPS

Tax Avoidance – United States

% Other Tax Avoiders, 2006/07



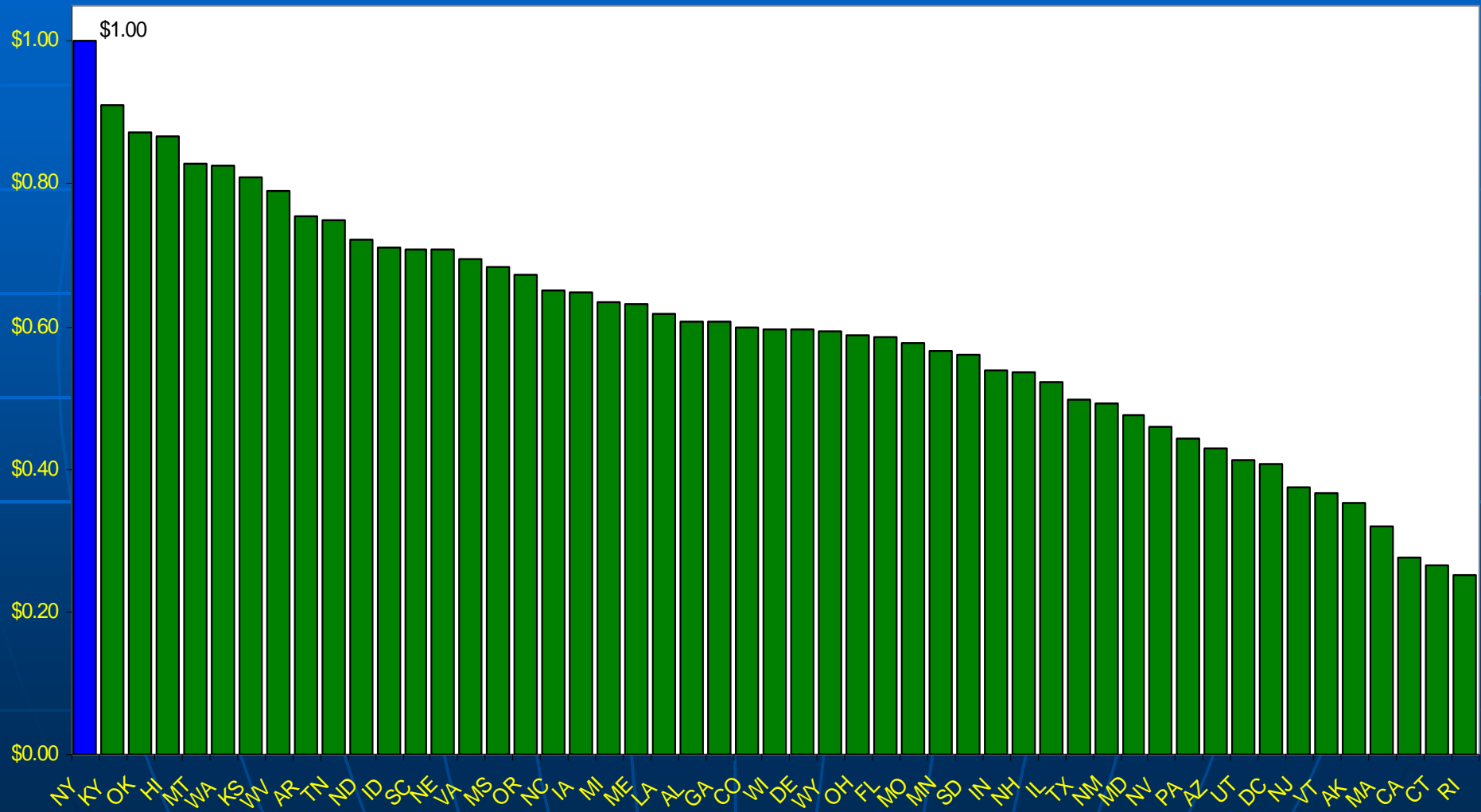
Source: Tax Burden on Tobacco, 2008 and TUS-CPS

Extent of Illicit Trade

- Individual tax avoidance – self-reported data
 - TUS-CPS
 - Does not pick up within state tax avoidance (e.g. purchases on reservations)
 - Comparison of average price paid by smokers purchasing in state from TUS to average prices reported in *Tax Burden on Tobacco*
 - Difference accounted for by several factors, including reservation purchases

Tax Avoidance – United States

Difference in TBOT and TUS Prices, 2006/07



Source: Tax Burden on Tobacco, 2008 and TUS-CPS

EU Tobacco/Economics Survey

Similar question on source of cigarettes:

B8) Think about the total number of cigarettes you used/had during the last 30 days. As a percentage, how many of them did you buy from the places below or were offered by peers? **SHOW CARD**

Cigarettes from national legal tobacco shops / legitimate retailers (*full price*) **[UK, Spain]**

|__|__|__| %

Cigarettes from vending machines

|__|__|__| %

Cigarettes bought over the internet

|__|__|__| %

Cigarettes from shops in other countries

|__|__|__| %

Cigarettes from duty-free shops

|__|__|__| %

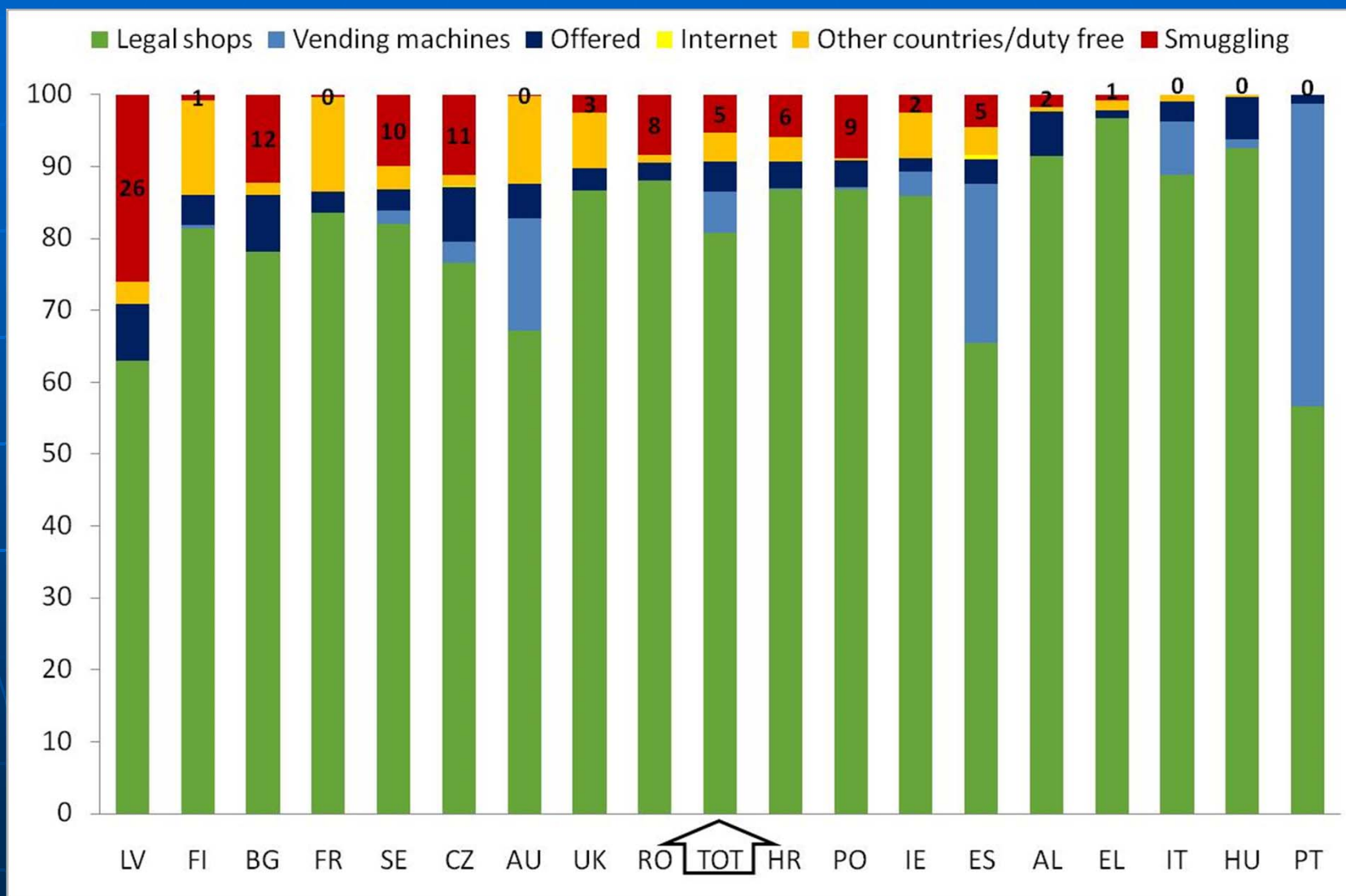
Cigs from an individual selling cigs independently at local

markets, delivery service, door-to-door, or just in the street |__|__|__| %

Cigarettes offered by peers

|__|__|__| %

EU Tobacco/Economics Survey



Measuring Avoidance & Evasion

- Pack collection or inspection
 - Presence/absence of warning label in local language
 - Presence/absence of local tax stamp
- Mix of tax avoidance & evasion
 - International Tobacco Control Policy Evaluation Study
 - European Survey on Economic Aspects of Tobacco Use

ITC: Classification Based on Tax Stamp



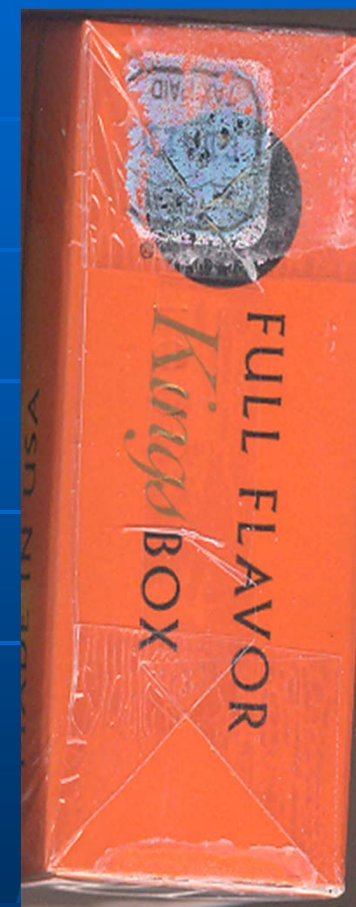
Likely Legitimate
State Tax Stamp



Non-State
Stamp

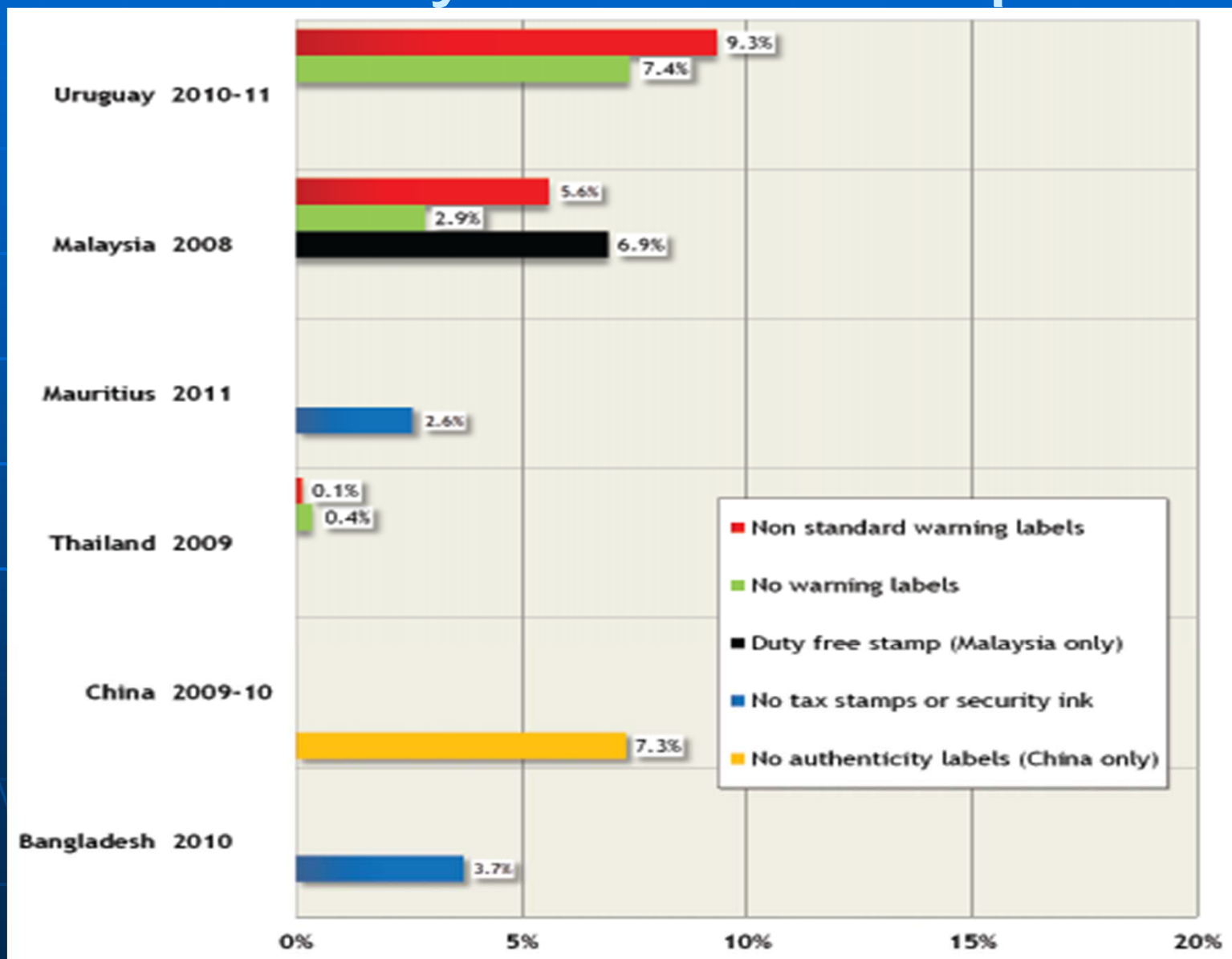


No Tax Stamp



Illegible Tax
Stamp

ITC Surveys – Pack Inspection



EU Tobacco/Economics Survey

Pack Inspection

B10) Please, could you show me the latest pack of cigarettes or hand rolling tobacco that you bought?

No 1
Yes 2

INTERVIEWER: COLLECT ALL THE FOLLOWING INFORMATION FROM THE PACK. IF IT IS NOT POSSIBLE TO SEE THE LATEST PACK BOUGHT, THEN ASK THE INTERVIEWEE TO PROVIDE THE INFORMATION REQUIRED

If you do not have it with you, could you remember the following information on your last pack of cigarettes or hand rolling tobacco?

c) Tax stamp (banderole)

[Country specific] stamp

1

Foreign stamp

2

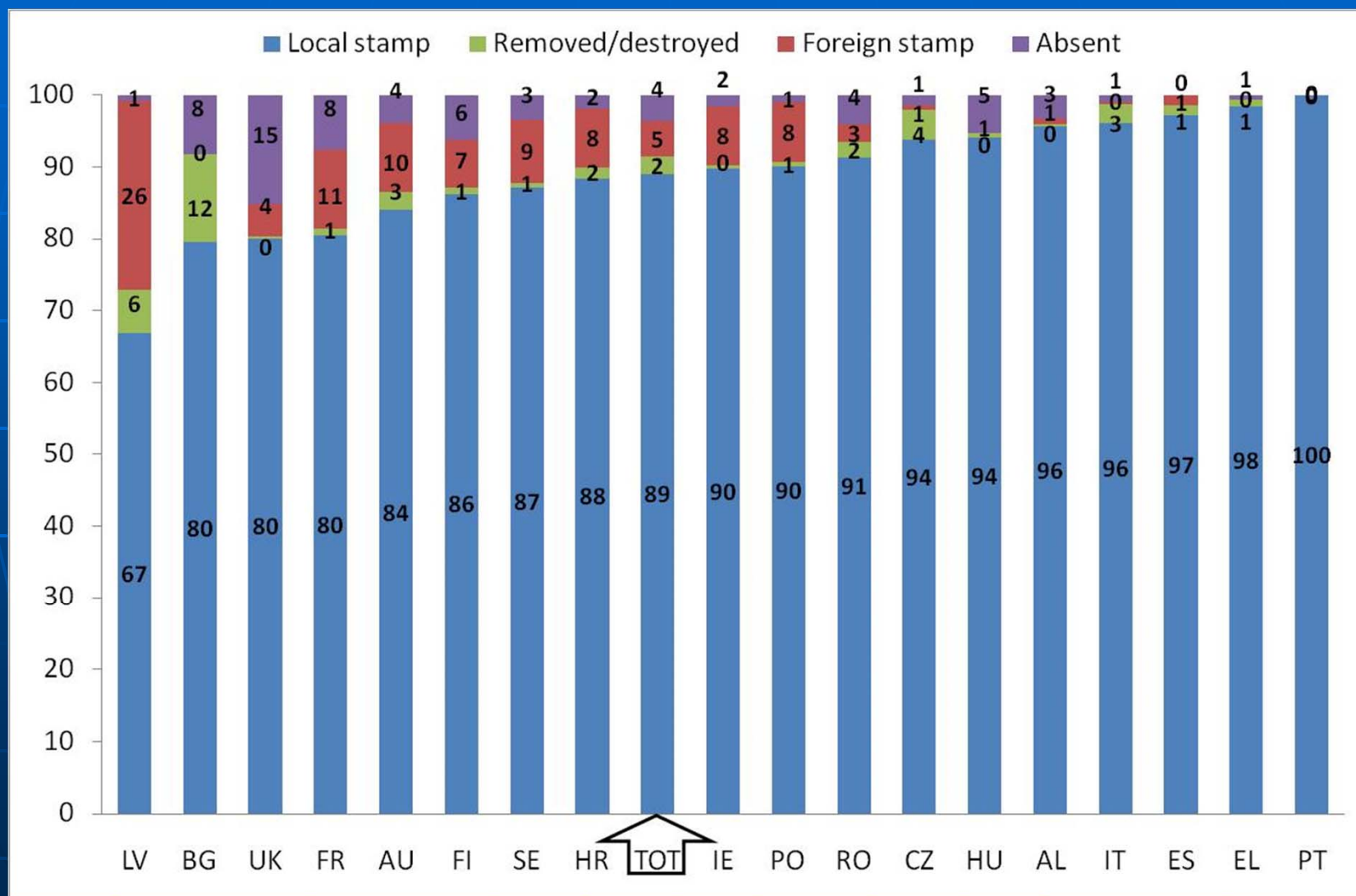
Stamp removed or destroyed

3

Lack of stamp/Duty-free pack

4

EU Tobacco/Economics Survey



EU Tobacco/Economics Survey

Pack Inspection

B10) Please, could you show me the latest pack of cigarettes or hand rolling tobacco that you bought?

No 1
Yes 2

INTERVIEWER: COLLECT ALL THE FOLLOWING INFORMATION FROM THE PACK. IF IT IS NOT POSSIBLE TO SEE THE LATEST PACK BOUGHT, THEN ASK THE INTERVIEWEE TO PROVIDE THE INFORMATION REQUIRED

If you do not have it with you, could you remember the following information on your last pack of cigarettes or hand rolling tobacco?

b) Health warnings

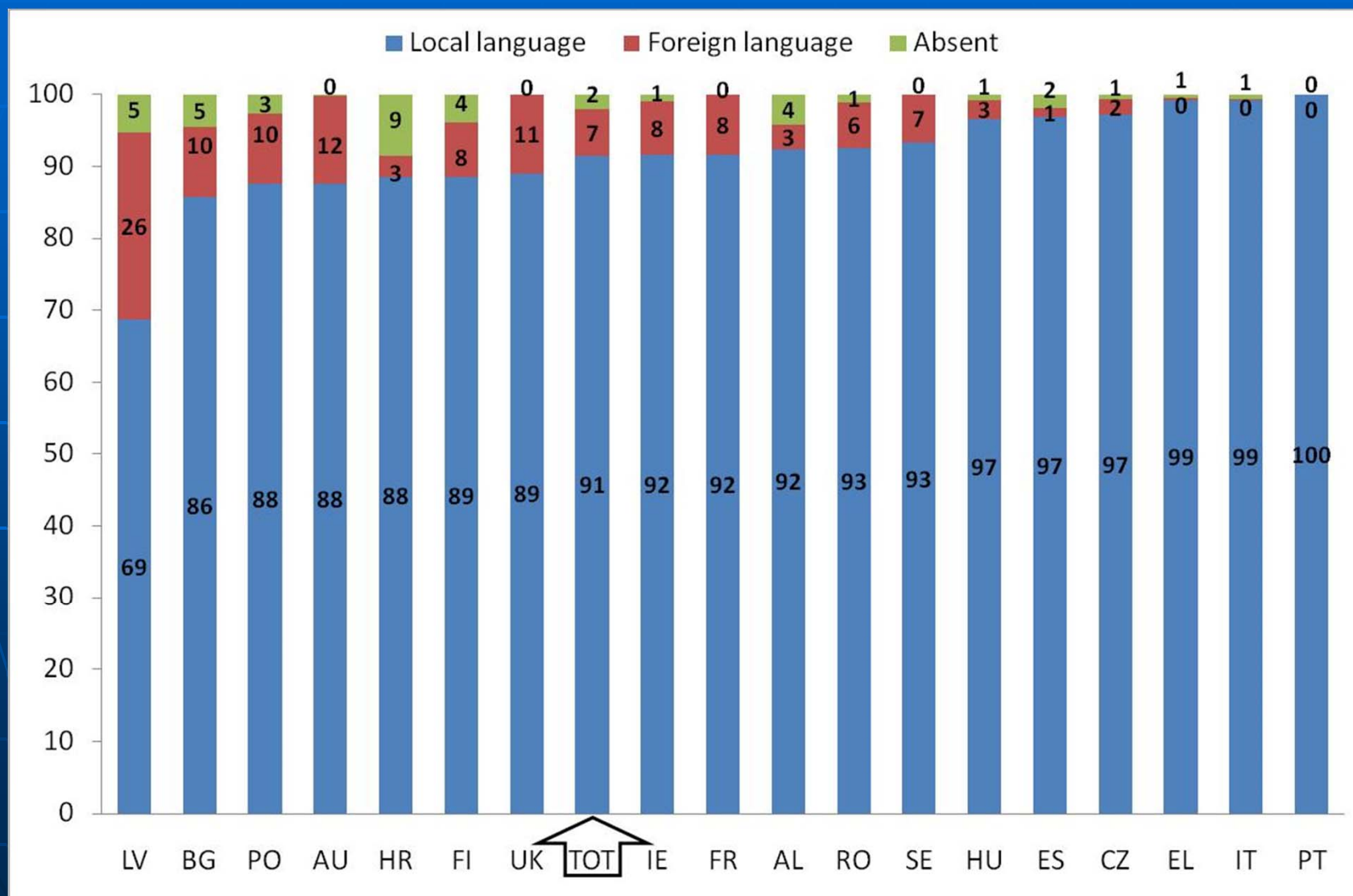
Health warnings in **[country specific]** language 1

Health warnings in foreign language

Lack of health warnings

2
3

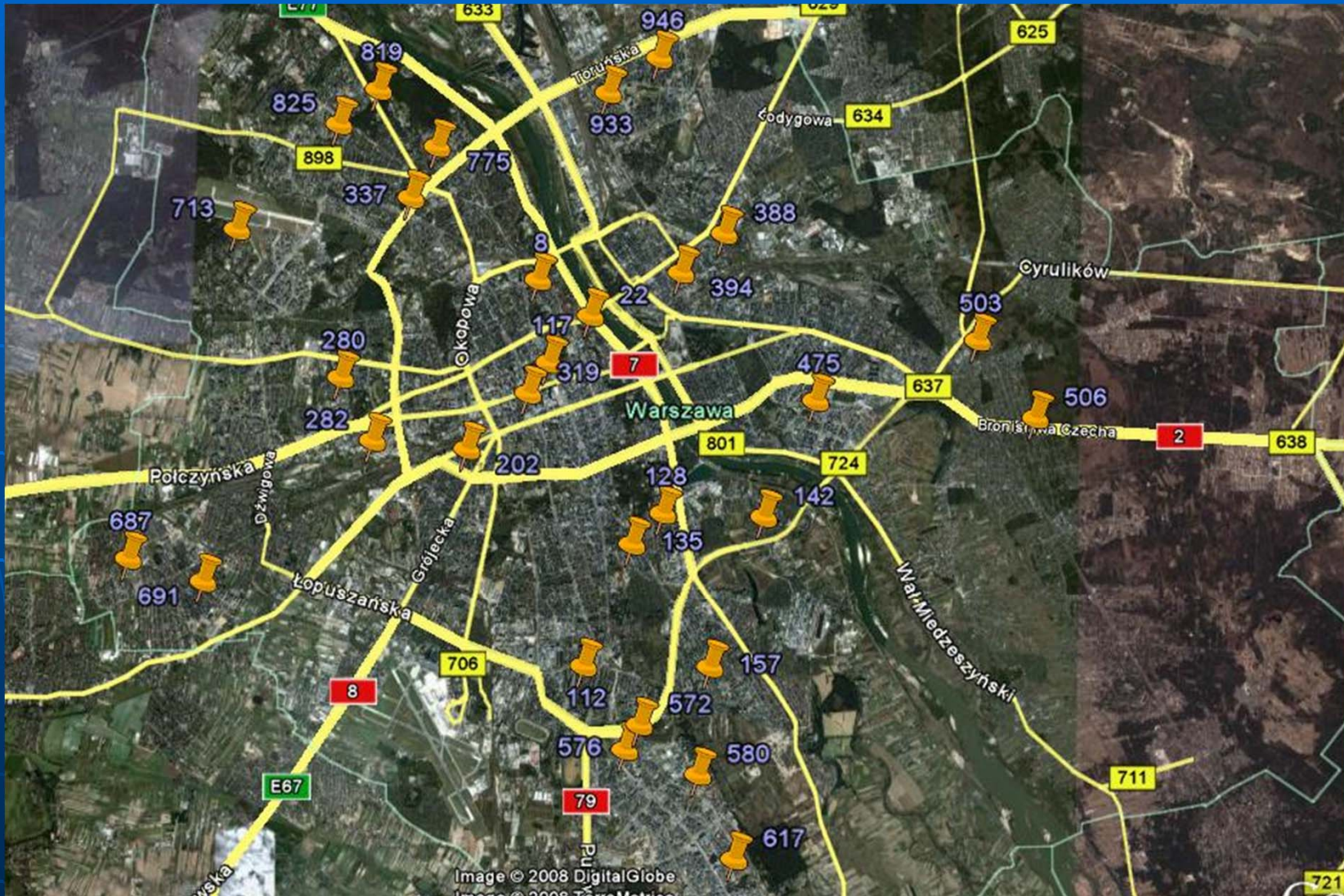
EU Tobacco/Economics Survey



Littered Pack Collection & Inspection

- Can identify purchase location (based on pack markings) and use location (based on location of littered pack)
- Challenges:
 - Defining sampling area and approach
- Limitations:
 - Smokers who litter may differ from other smokers
 - Will overestimate given commuting patterns, tourism
 - Timing unknown

Warsaw Poland



Source: Merriman, 2012

Country issuing stamps found on littered packs in Warsaw Poland (Summer 2008)

Country issuing stamp	Freq. (number of packs)	Unweighte d Percent	Weighted Percent
missing	87	11.43	10.64
Belarus	3	0.39	0.48
Other	4	0.53	0.49
Poland	611	80.29	81.91
Russian Federation	3	0.39	0.37
Ukraine	53	6.96	6.11
Total	761	100	100

Measuring Avoidance & Evasion

- Combining methods
 - Expert opinions
 - Potentially most comprehensive but can be biased based on “experts”
 - Econometric modeling
 - Cross-border shopping, bootlegging
 - Self-report
 - Mix of individual avoidance and bootlegging/smuggling
 - Littered pack collection
 - Mix of all activities, but may overstate problem
 - Pack inspection
 - May be most comprehensive, least biased

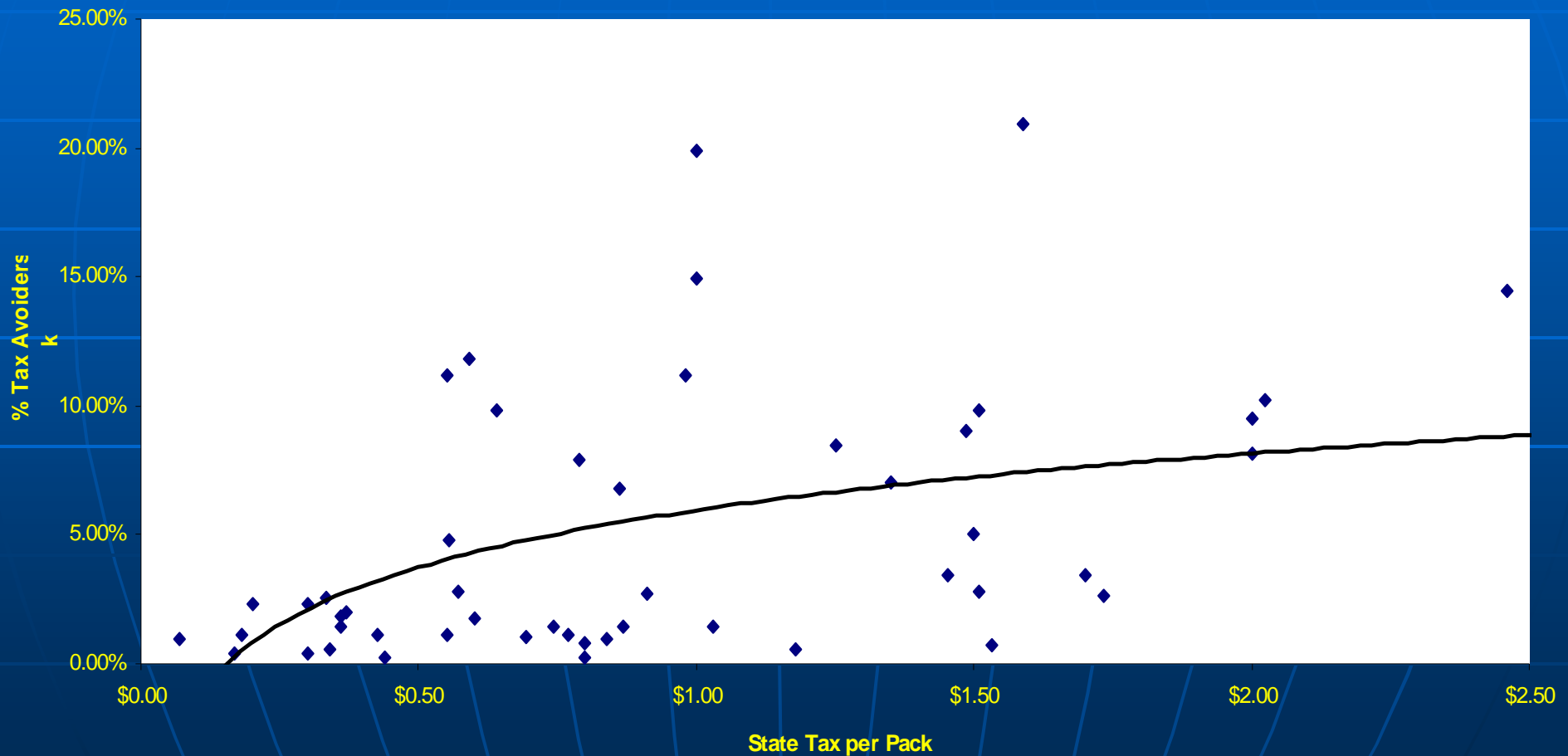
Determinants of Tax Avoidance/Evasion

Determinants of Avoidance & Evasion

- Tax and price differentials
 - More important for individual tax avoidance and bootlegging
 - Larger scale efforts avoid all taxes

Tax Avoidance – United States

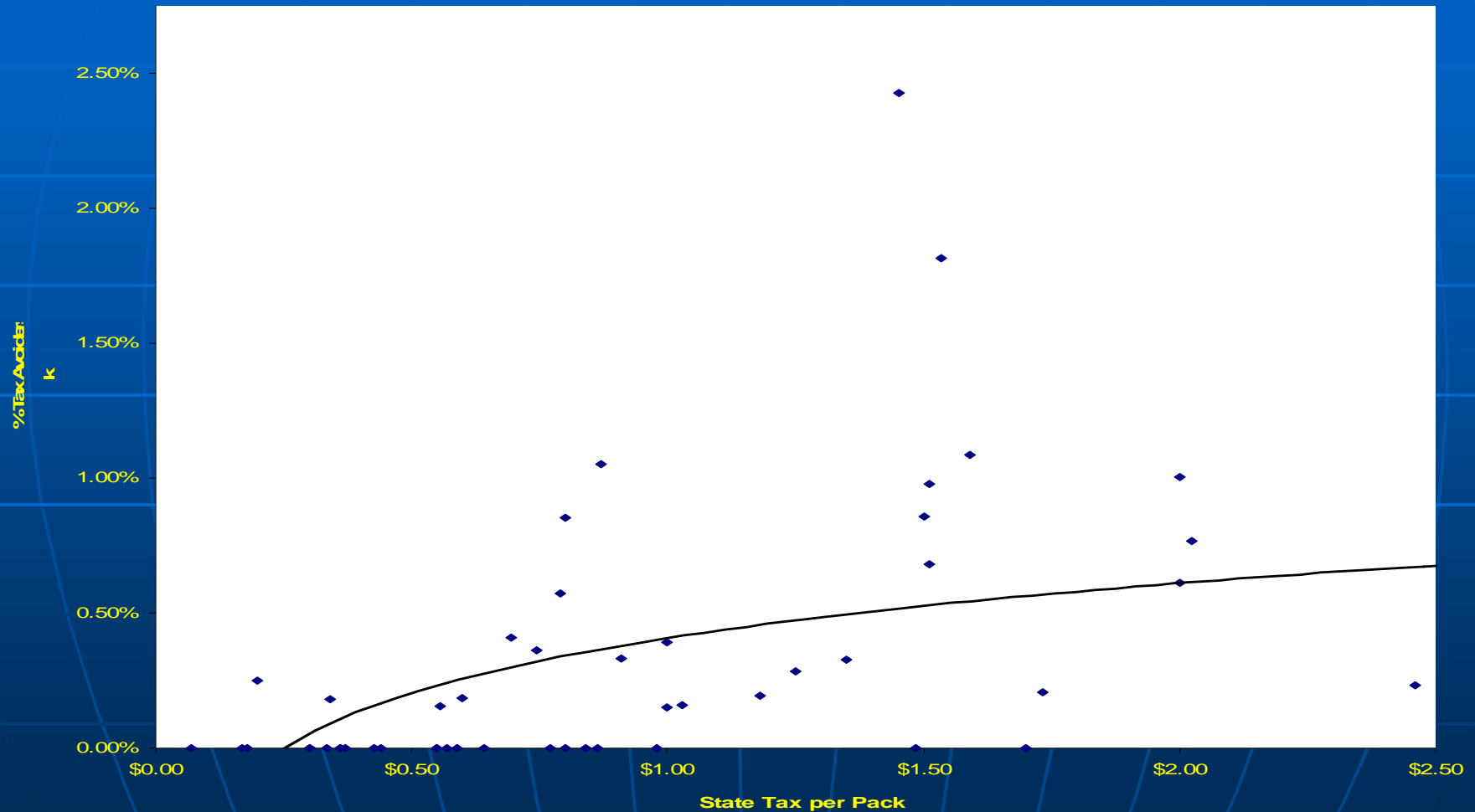
Cross Border Tax Avoidance and State Cigarette Taxes, 2006/07



Source: Tax Burden on Tobacco, 2008 and TUS-CPS

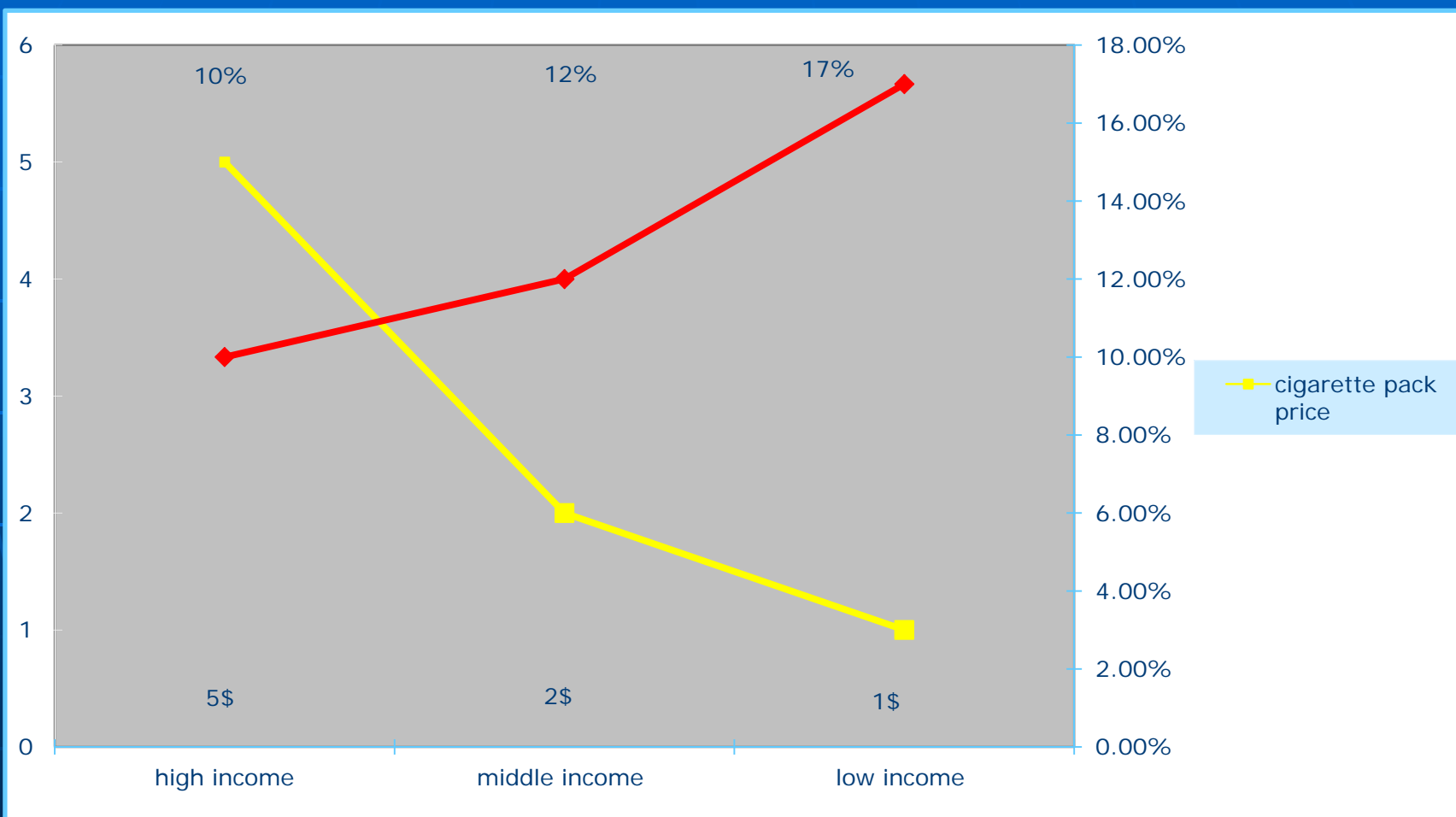
Tax Avoidance – United States

Other Tax Avoidance and State Cigarette Taxes, 2006/07



Source: Tax Burden on Tobacco, 2008 and TUS-CPS

The illicit cigarette market share (%) and the average cigarette pack price(\$) in high, middle and low income countries in 2007.



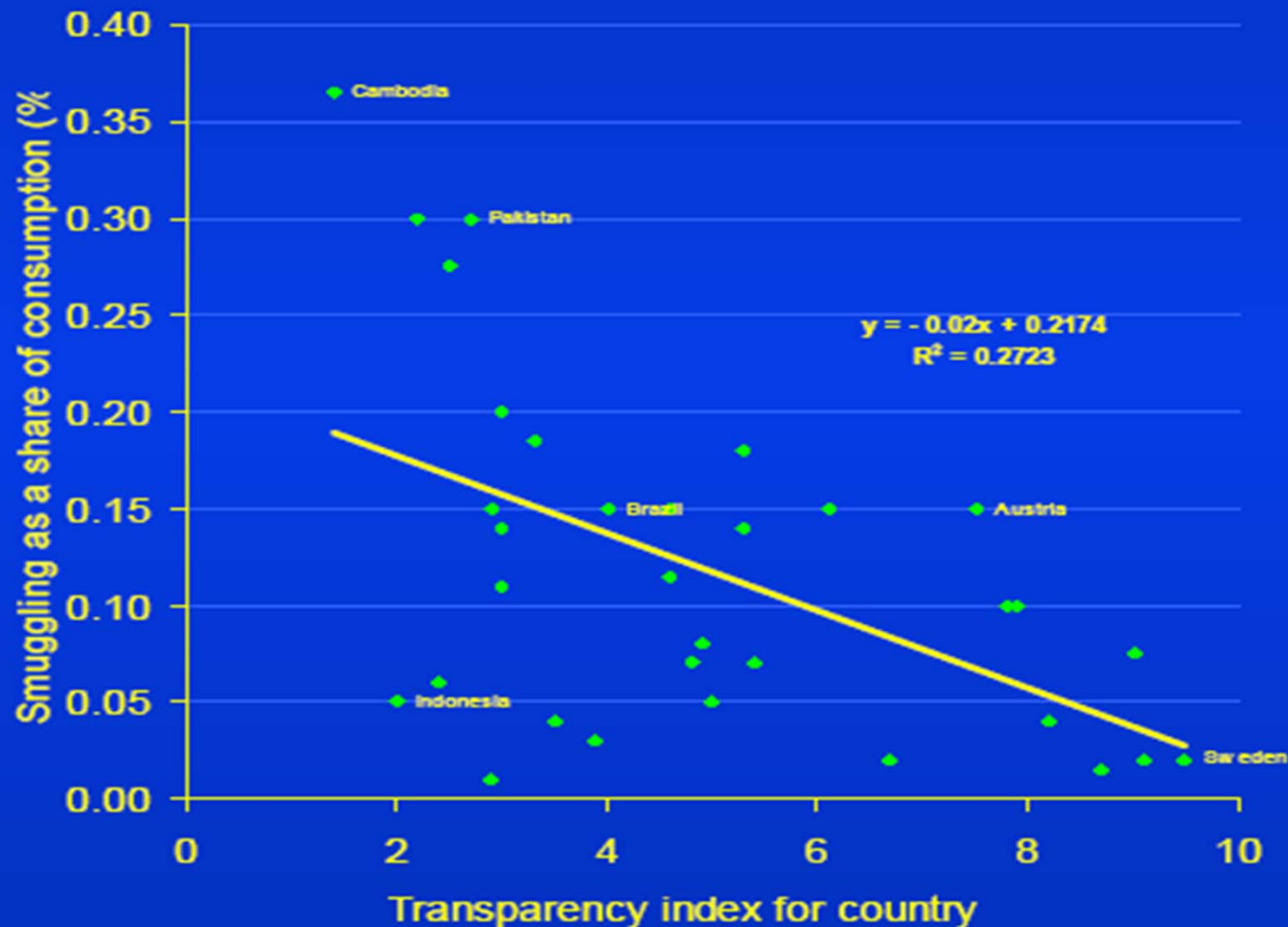
Source: WHO & IUATLD, 2009

Determinants of Avoidance & Evasion

- Corruption
- Weak tax administration
 - Absence of tax stamps; weak or non-existent physical controls; unlicensed manufacturers, distributors, retailers; weak customs authorities
- Poor enforcement
 - Limited resources for border patrols, customs authorities, etc; low penalties

Smuggling and Corruption

Smuggling as a function of transparency index



Source: Merriman *et al.*, 2000

Determinants of Avoidance & Evasion

- Presence of informal distribution channels
 - e.g. Street vendors, unlicensed distributors
- Presence of criminal networks
 - e.g. Organized crime, terrorist organizations
- Access to cheaper sources
 - e.g. reservations, duty free, cross border

EU Tobacco/Economics Survey

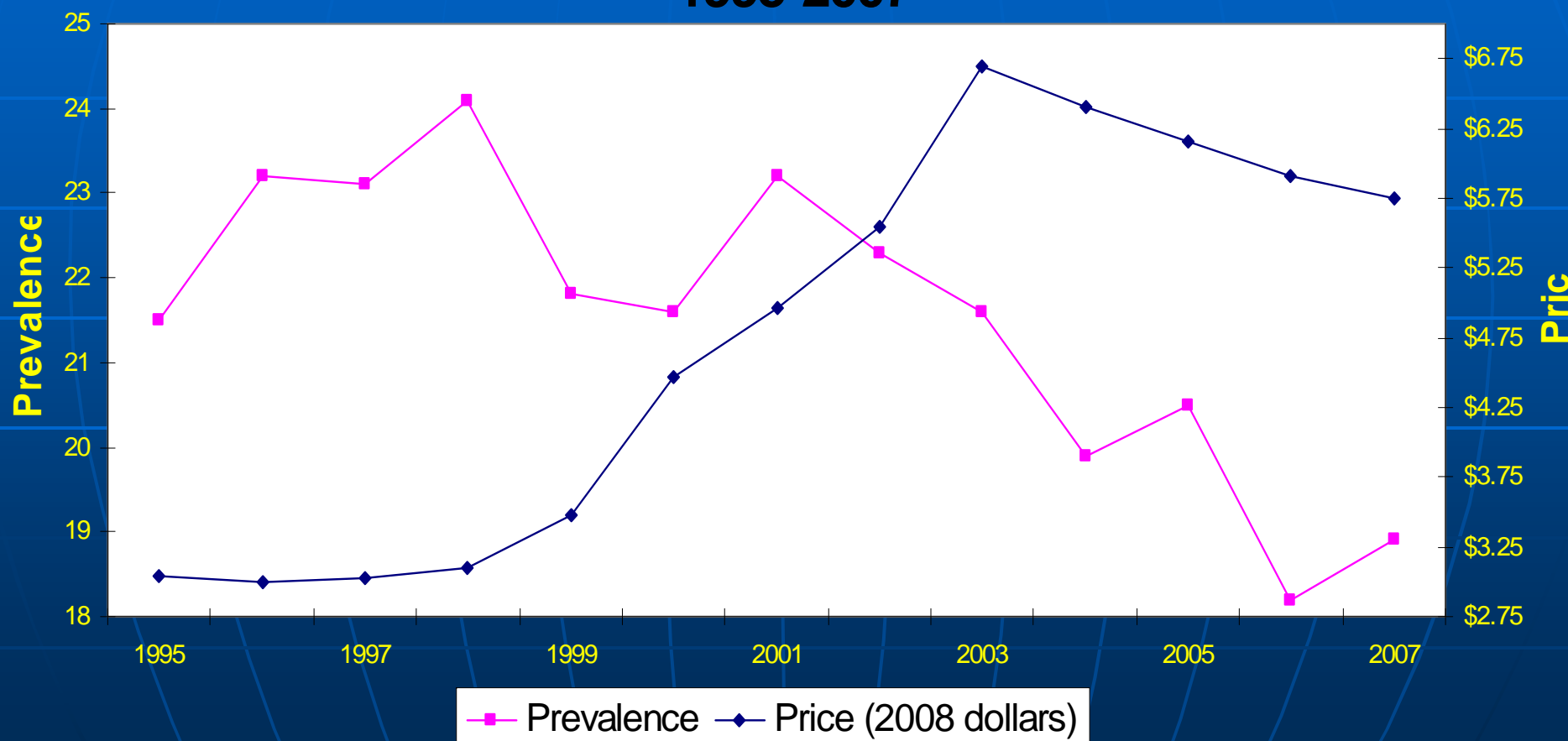
Table 2: Odds of purchasing latest pack (of cigarettes or HRT) from an illegal source: environmental determinants

Covariates	N	% smuggling	Illegal vs legal sources OR (95% CI)**	p-value
Distance				
Far/close	3503	4.2	1*	
Border	1342	10.8	1.36(1.04-1.78)	0.02
Corruption				
Low/Medium	2233	3.0	1*	
High	2612	8.7	0.94 (0.64-1.36)	0.74
Average Price				
3+	2582	1.8	1*	
0-3	2263	10.9	6.11 (3.91-9.54)	<0.001

Impact of Tax Avoidance/Evasion

Tax Avoidance & Evasion Do NOT Eliminate Health Impact of Higher Taxes

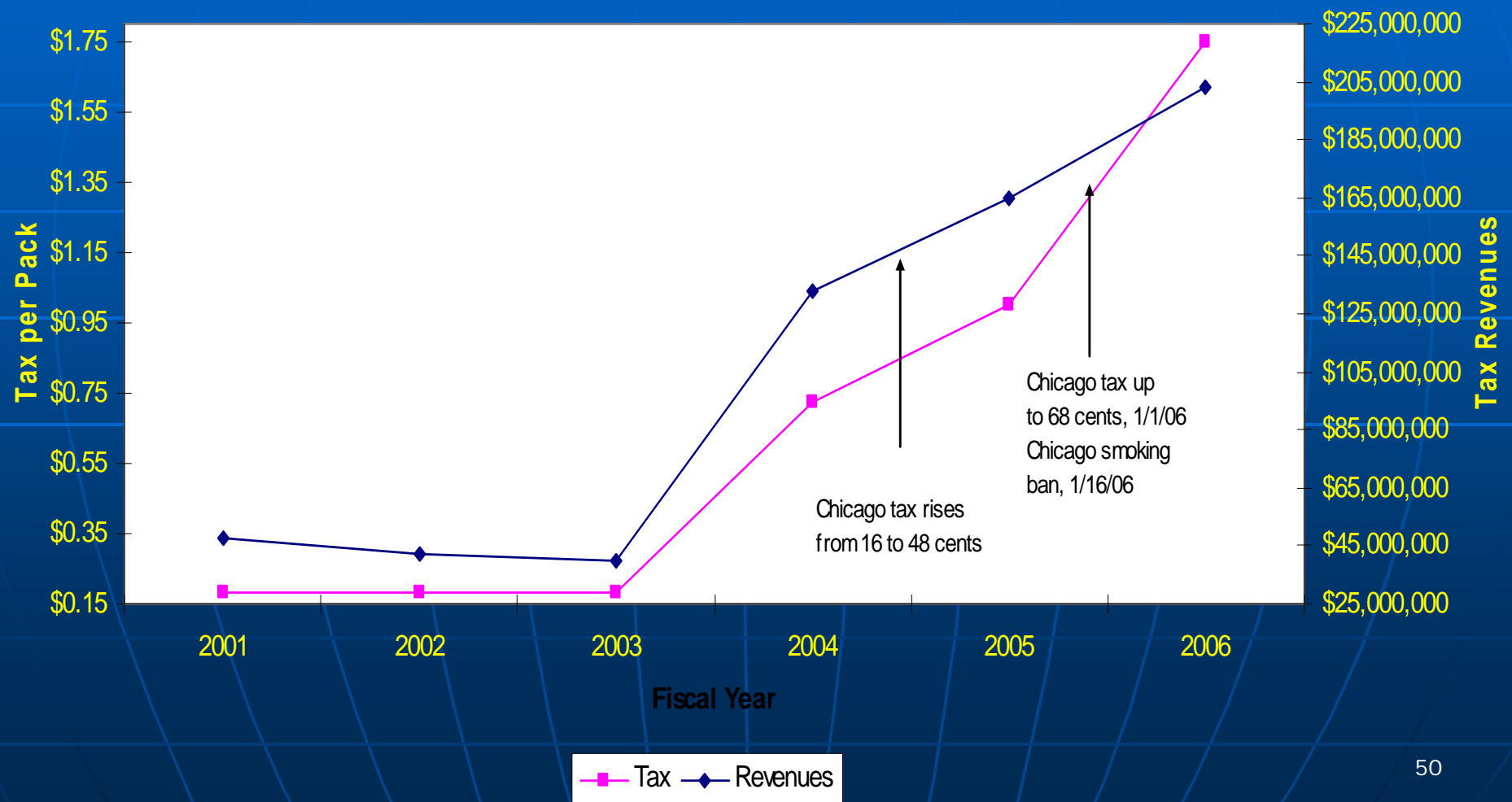
Cigarette Prices and Adult Prevalence, New York, 1995-2007



Source: Tax Burden on Tobacco, 2008 and BRFSS

Tax Avoidance & Evasion Do NOT Eliminate Revenue Impact of Higher Taxes

Cook County Cigarette Tax and Tax Revenues - FY01-FY06



World wide estimates

The impact of eliminating the global illicit cigarette trade on health and revenue

Joossens, et al. (2010)

1. What is the extent of illicit cigarette trade?
2. What would be the effect of eliminating illicit trade on cigarette prices and on consumption?
3. How much revenue are governments losing because of illicit cigarette trade?
4. How many premature deaths would be avoided by eliminating illicit cigarette trade?

World wide estimates

The impact of eliminating the global illicit cigarette trade on health and revenue

	Global	High income countries	Low and middle income countries
Illicit cigarette trade: current situation			
Total illicit market (% of consumption)	11.6%	9.8%	12.1%
Total illicit market (cigarettes per year)	657 billion	124 billion	533 billion
Total annual revenue lost to governments	\$40.5 billion	\$17.6 billion	\$22.9 billion
Estimated deaths in 2030	8.3 million	1.5 million	6.8 million
If this illicit trade were eliminated			
Average price increase	3.9%	3.9%	3.8%
Decline in consumption (%)	2.0%	2.2%	1.9%
Decline in consumption (cigarettes)	112.8 billion	27.3 billion	85.4 billion
Immediate gain in annual revenue	\$31.3 billion	\$13 billion	\$18.3 billion
Lives saved in 2030 and annually thereafter	164,131	32,332	131,799

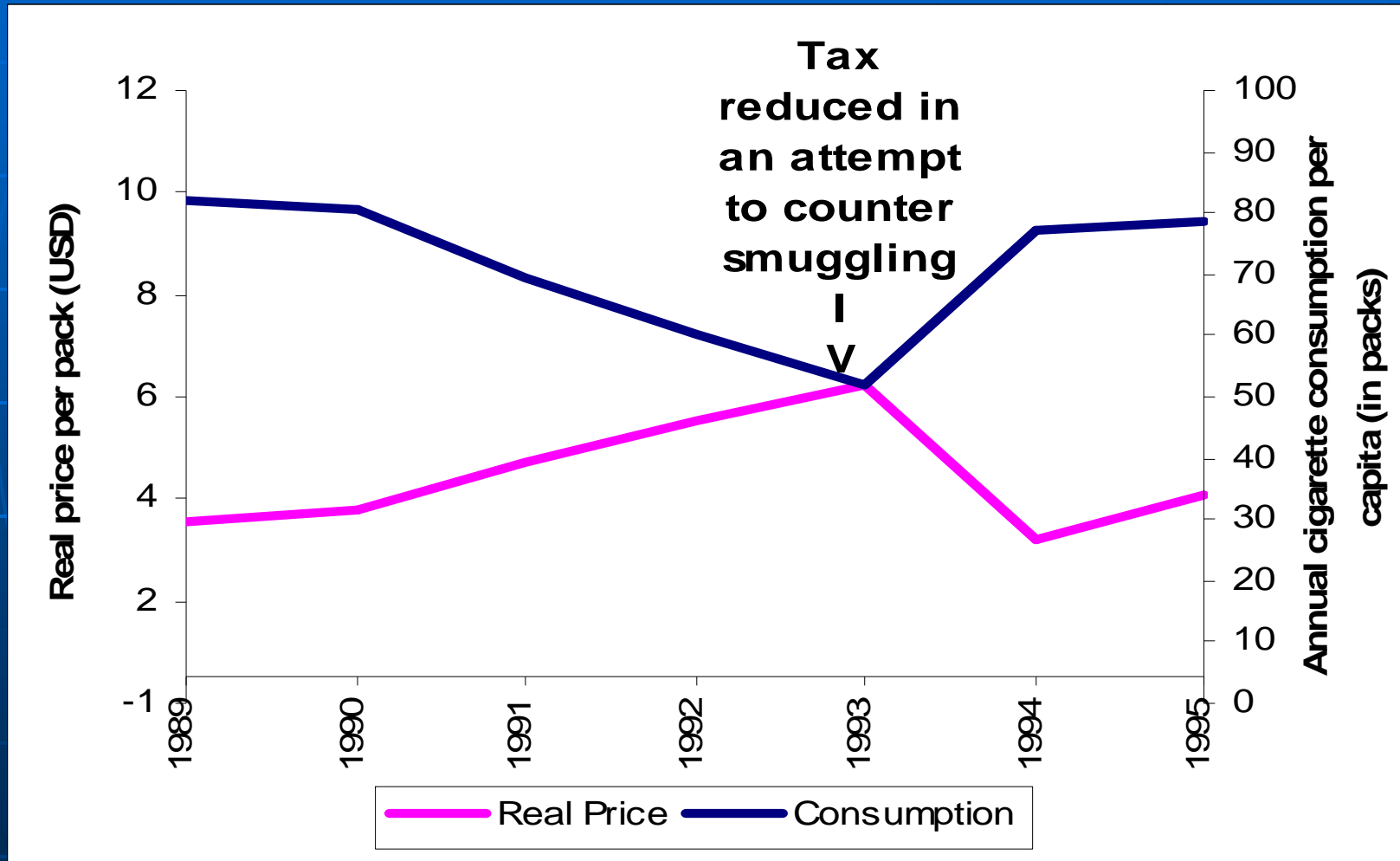
Source: Joossens et al., 2010

Impact of Avoidance & Evasion

- IARC Handbook 14:
 - Sufficient Evidence that tax avoidance and tax evasion reduce, but do not eliminate, the public health and revenue impact of tobacco tax increases

Policy Responses

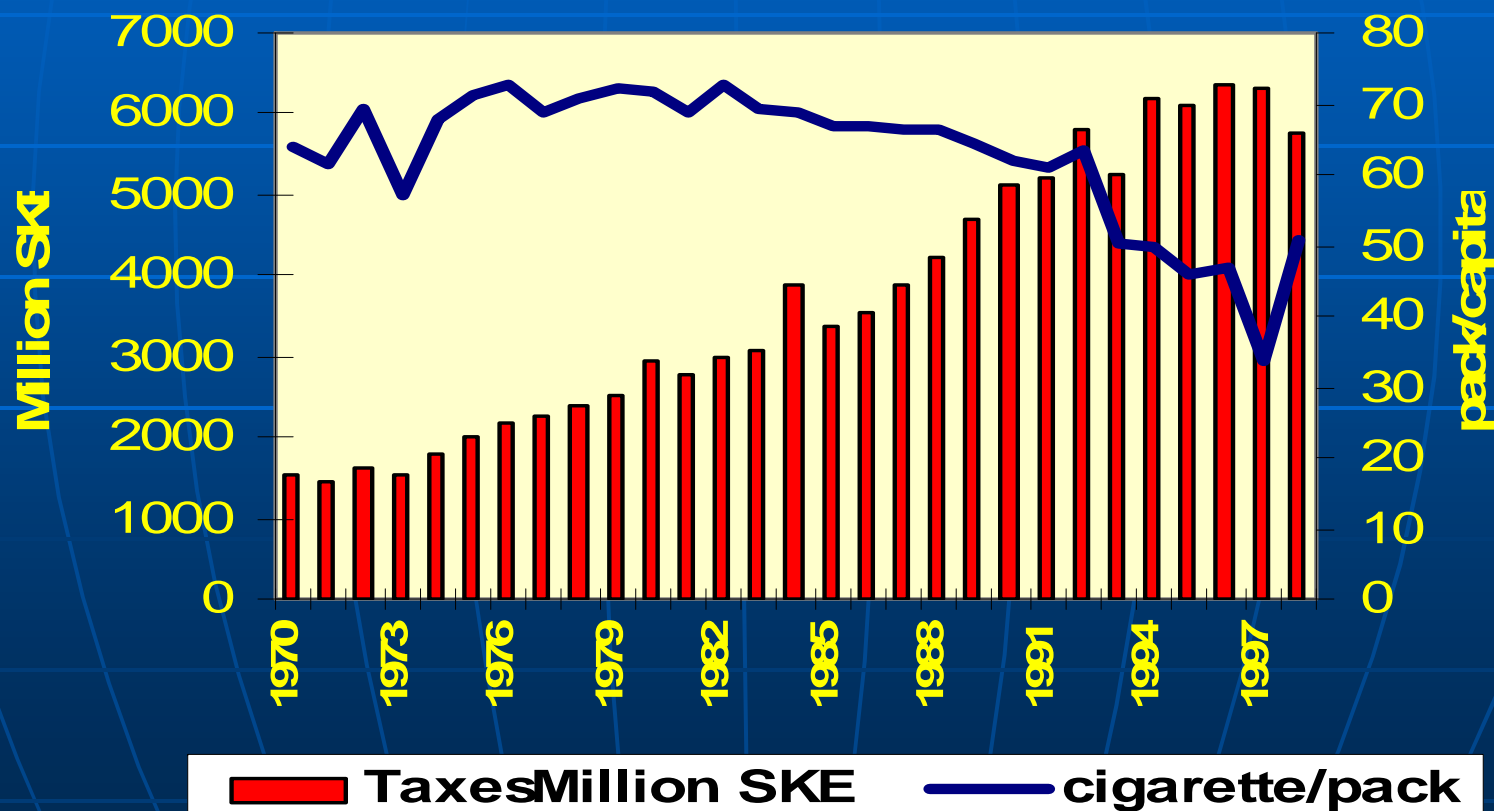
Government Responses: Canada, 1990s



Source: World Bank, 2003

Government Responses: Sweden, 1998

Cigarette Tax Revenue and Consumption in Sweden, 1970-1998

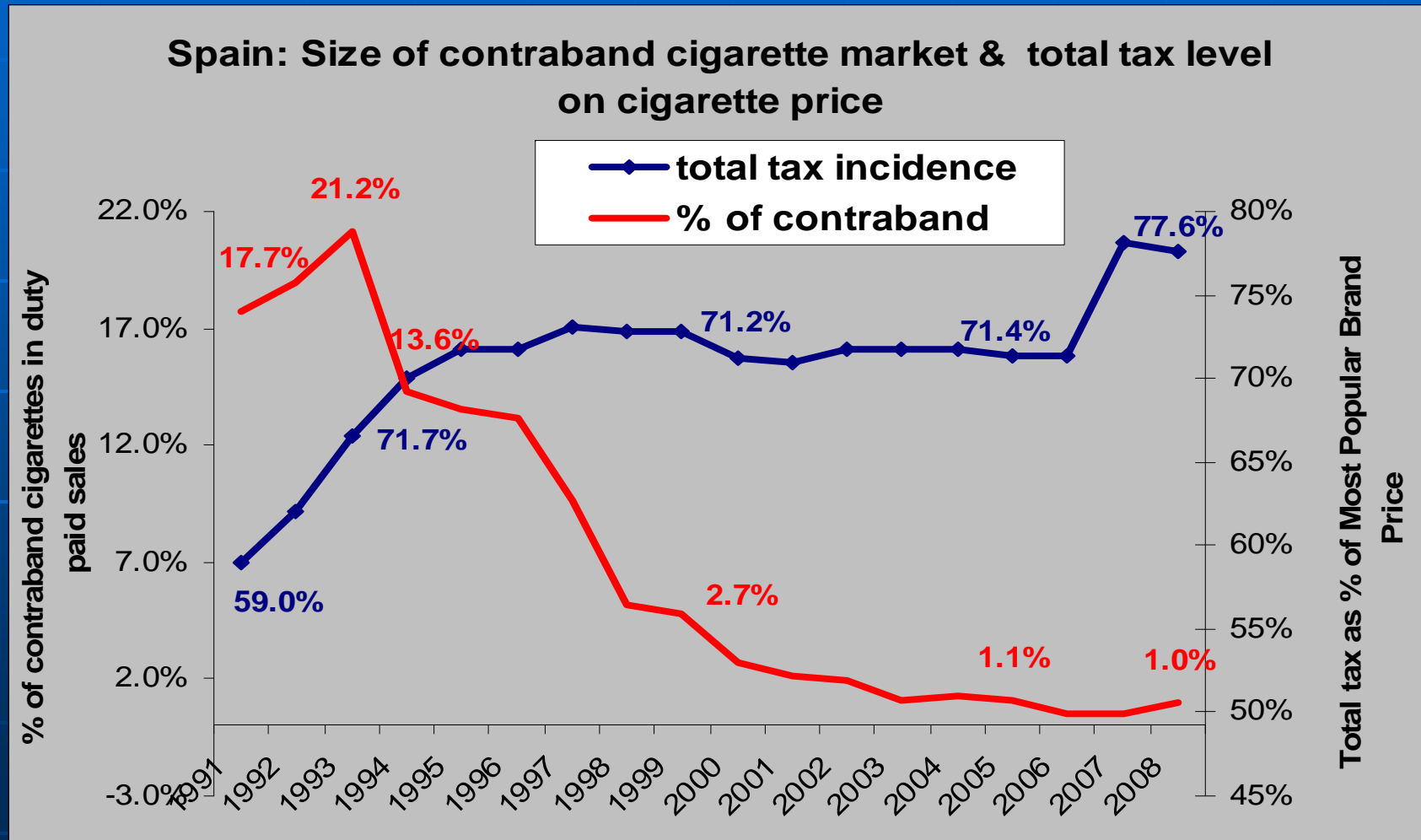


Combating Illicit Trade

■ Spain

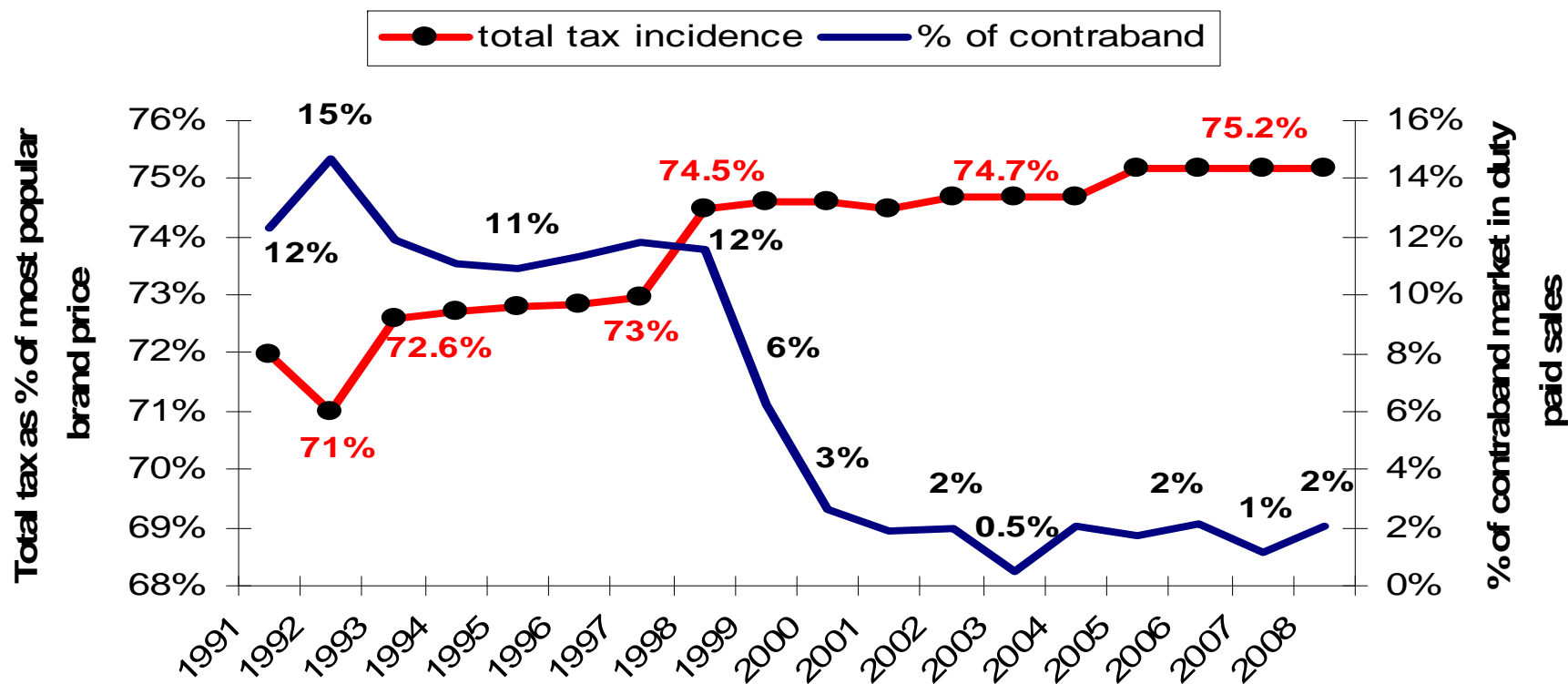
- Reduced share of smuggled cigarettes from estimated 15% in 1995 to 5% in 1999
 - Focus on large scale, container smuggling
 - Strengthened tax administration with new technology and better enforcement
 - Collaboration with France, Andorra, Ireland, UK and the EU Anti-Fraud Office
 - Did NOT focus on individual tax avoidance, street sellers

Cigarette tax and illegal cigarette market, Spain 1991-2008



Cigarette tax and illegal cigarette market, Italy. 1991-2008

Italy: Size of cigarette contraband market & total tax on cigarettes



Impact of Avoidance & Evasion

- World Bank Policy Report:
 - Rather than forego tax increases, appropriate response is to crack down on illicit trade
- IARC Handbook 14:
 - Strong evidence that a coordinated set of interventions that includes international collaborations, strengthened tax administration, increased enforcement, and swift, severe penalties reduces illicit trade in tobacco products

WHO FCTC

- Article 15: Illicit trade in tobacco products
 - The Parties recognize that the elimination of all forms of illicit trade in tobacco products, including smuggling, illicit manufacturing and counterfeiting, and the development and implementation of related national law, in addition to subregional, regional and global agreements, are essential components of tobacco control.
 - Each Party shall adopt and implement effective legislative, executive, administrative or other measures to ensure that all unit packets and packages of tobacco products and any outside packaging of such products are marked to assist Parties in determining the origin of tobacco products, and in accordance with national law and relevant bilateral or multilateral agreements, assist Parties in determining the point of diversion and monitor, document and control the movement of tobacco products and their legal status. In addition, each Party shall.....

Combating Tax Avoidance & Evasion

- Illicit trade protocol to the WHO FCTC
 - Adopted November 2012; currently in process of being signed/ratified; provisions calling for:
 - Strong tax administration
 - Prominent, high-tech tax stamps and other pack markings
 - Licensing of manufacturers, exporters, distributors, retailers
 - Export bonds
 - Unique identification codes on packages
 - Better enforcement
 - Increased resources
 - Focus on large scale smuggling
 - Swift, severe penalties
 - Multilateral/intersectoral cooperation

For more information:

fjc@uic.edu

www.tobacconomics.org
(coming soon)