

# Economic Research on Tobacco

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## Tax Avoidance & Evasion

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# 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

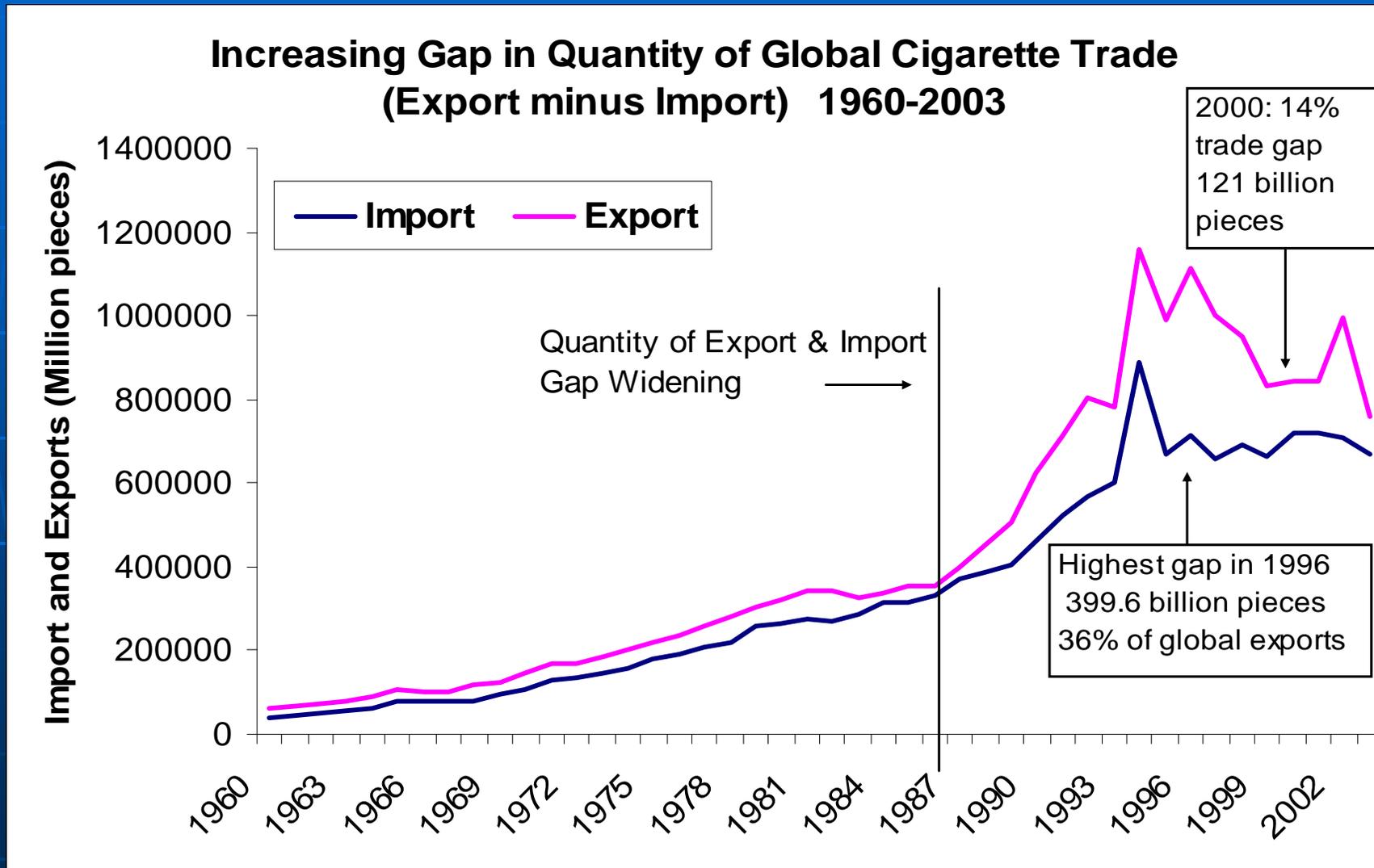
# Measuring Avoidance & Evasion

- 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

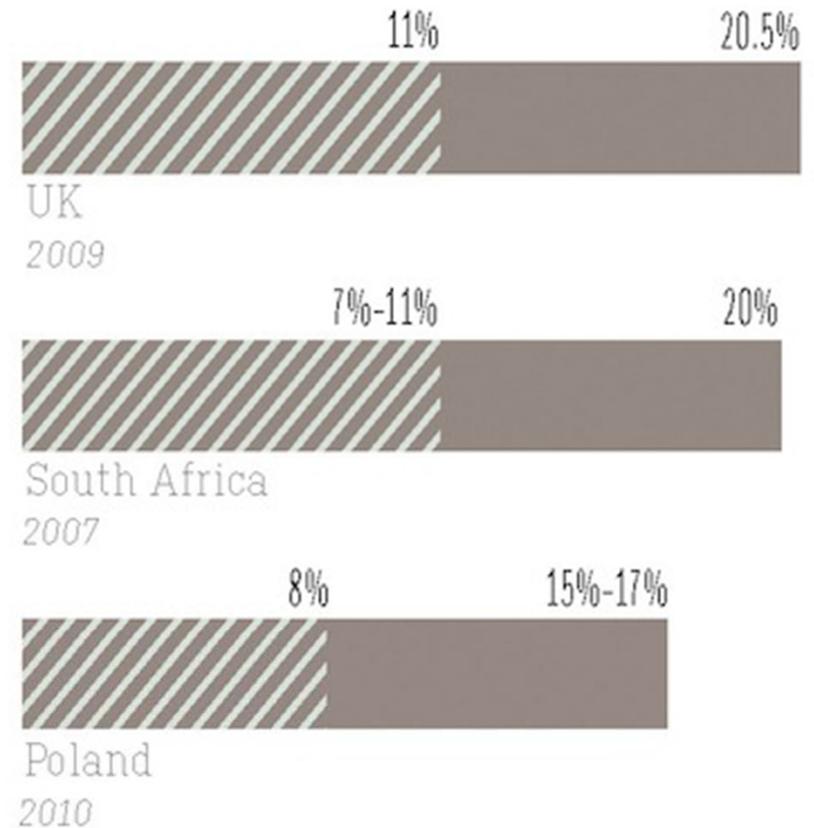
- “Expert Opinions”
  - Customs officials, tobacco industry representatives, tax authorities, and others
    - Potential bias in some sources
  - Widely varying estimates across countries
  - Recent estimates 10-12%
  - Again, largely reflecting organized smuggling

# Tax Avoidance and Evasion

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

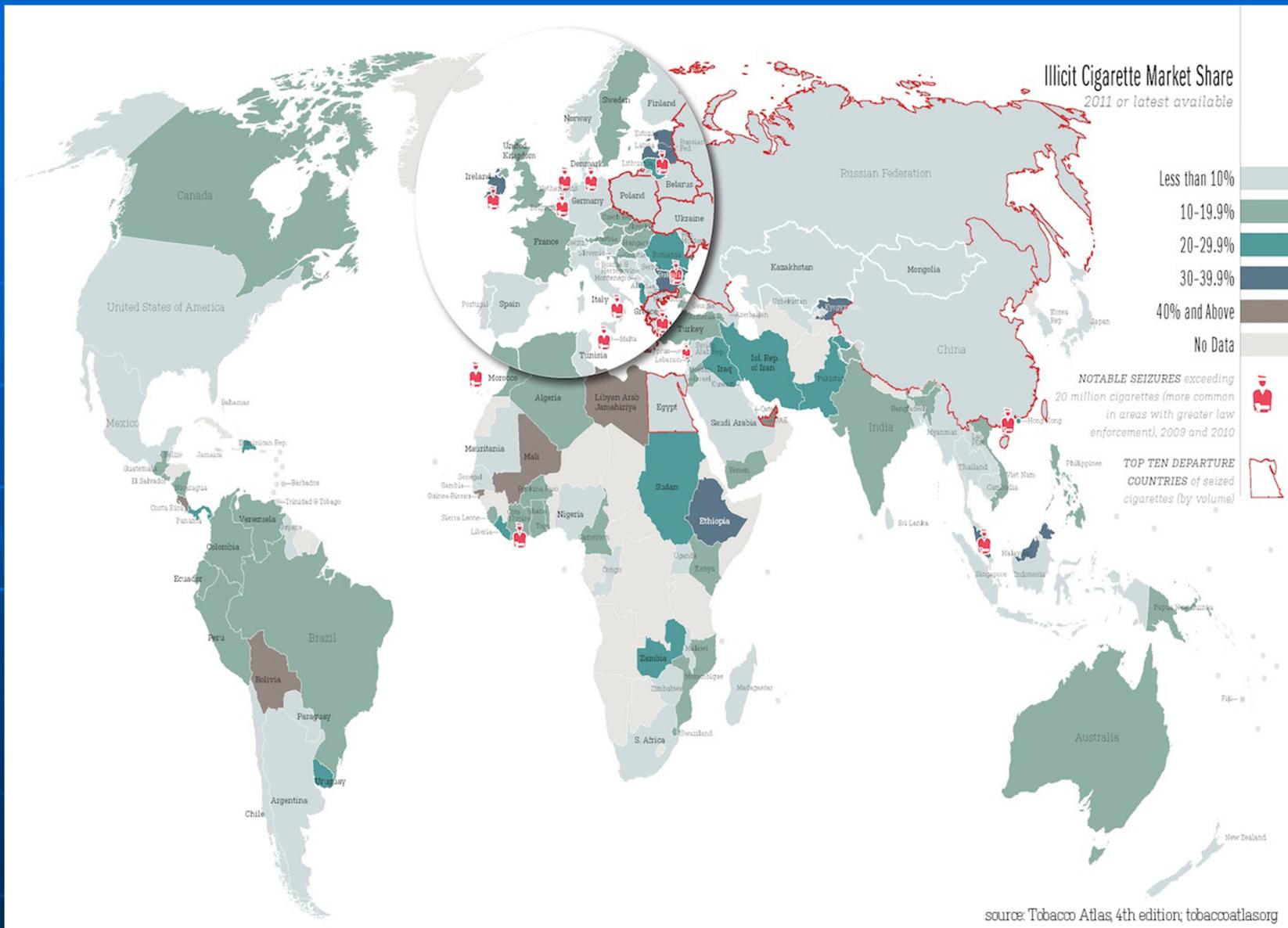
Estimates of illicit cigarette trade from the tobacco industry vs. the estimates from academic studies

*As a percent of total consumption*



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

# Tax Avoidance and Evasion



Source: Tobacco Atlas, 4<sup>th</sup> edition

# Measuring Avoidance & Evasion

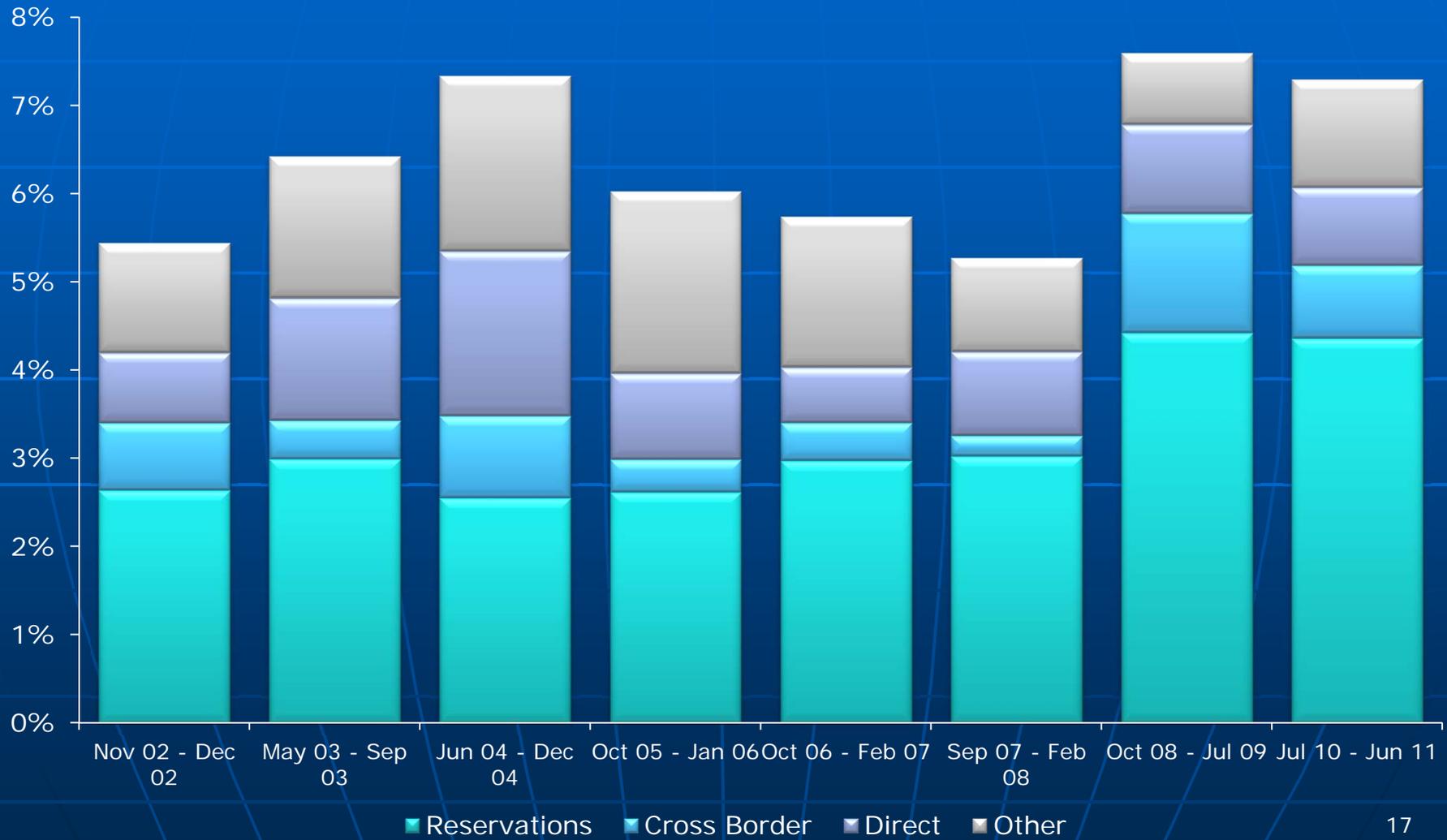
- Individual tax avoidance a bit easier to assess
  - Econometric analyses of tax paid sales that account for various factors, including:
    - tax/price differences
    - population density
    - travel patterns and distance
  - US estimates suggest up to 12.5% of total consumption in early 2000s
 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

# Extent of Illicit Trade

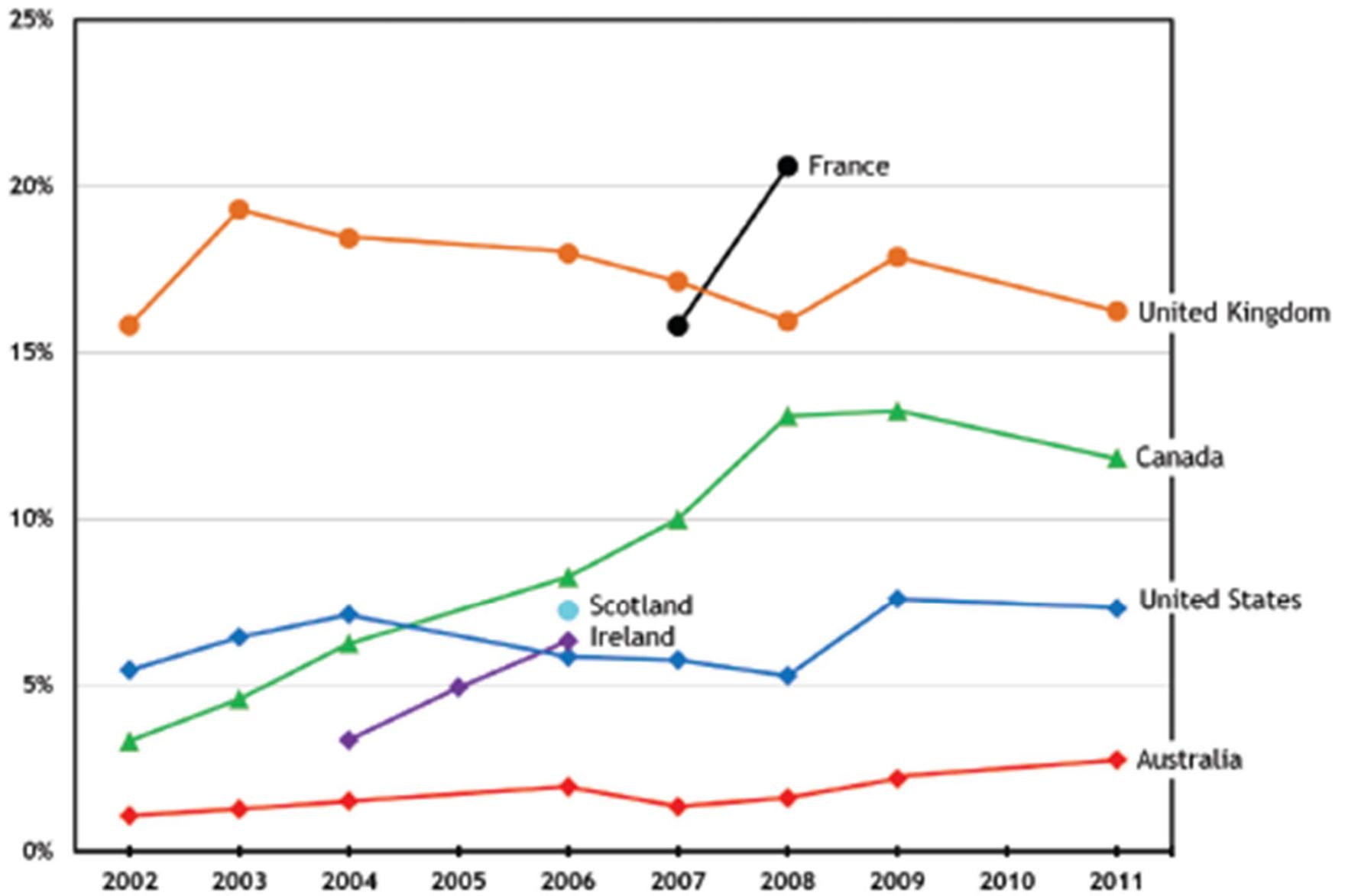
- Individual tax avoidance – self-reported data
  - International Tobacco Control Policy Evaluation Study
    - Longitudinal, annual survey of smokers in numerous countries, including Canada and US
    - Includes questions on purchase locations, including Internet, telephone, cross-border, duty free,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

# Tax Avoidance

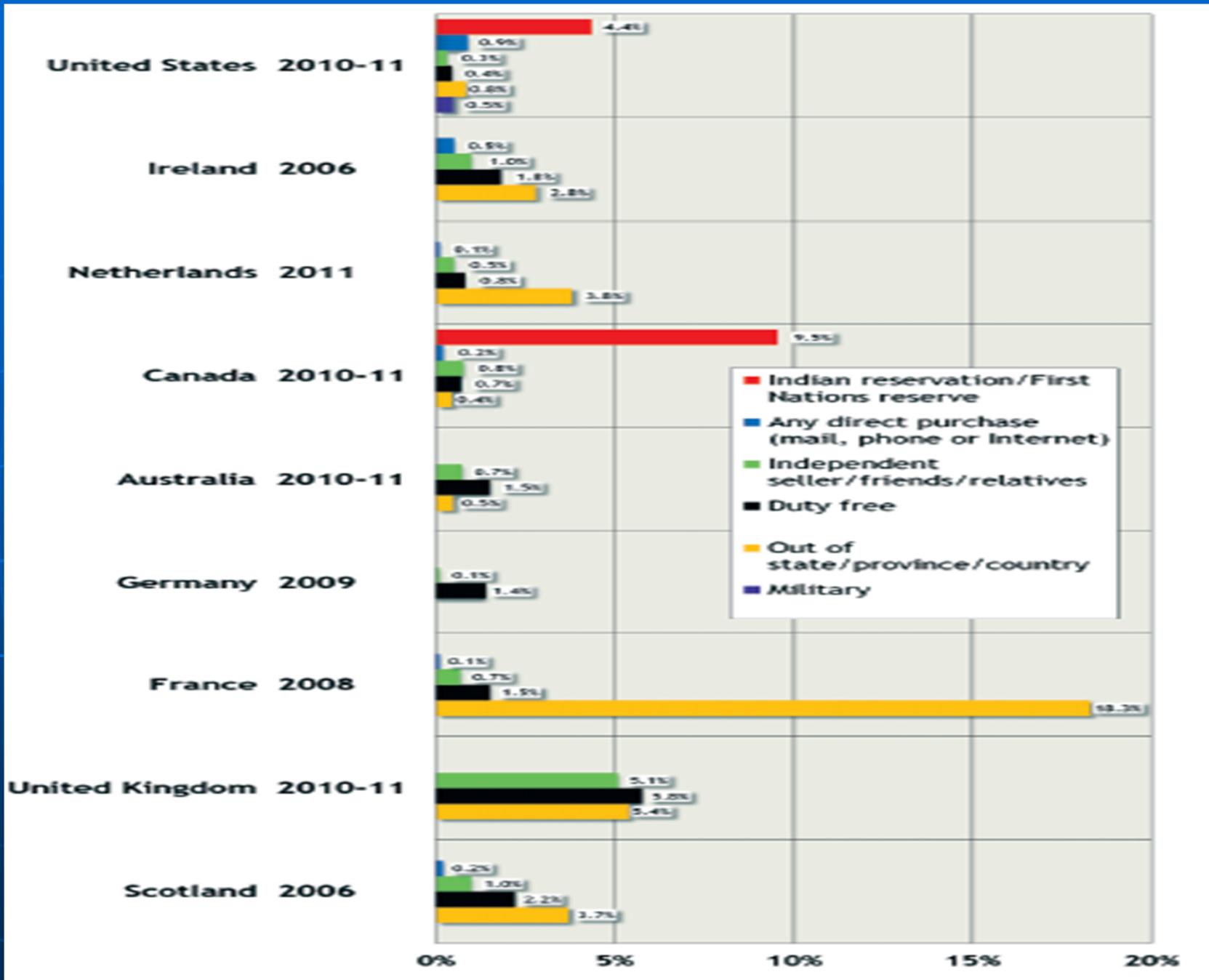
US Smokers, Last Purchase, November 2002-June 2011



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



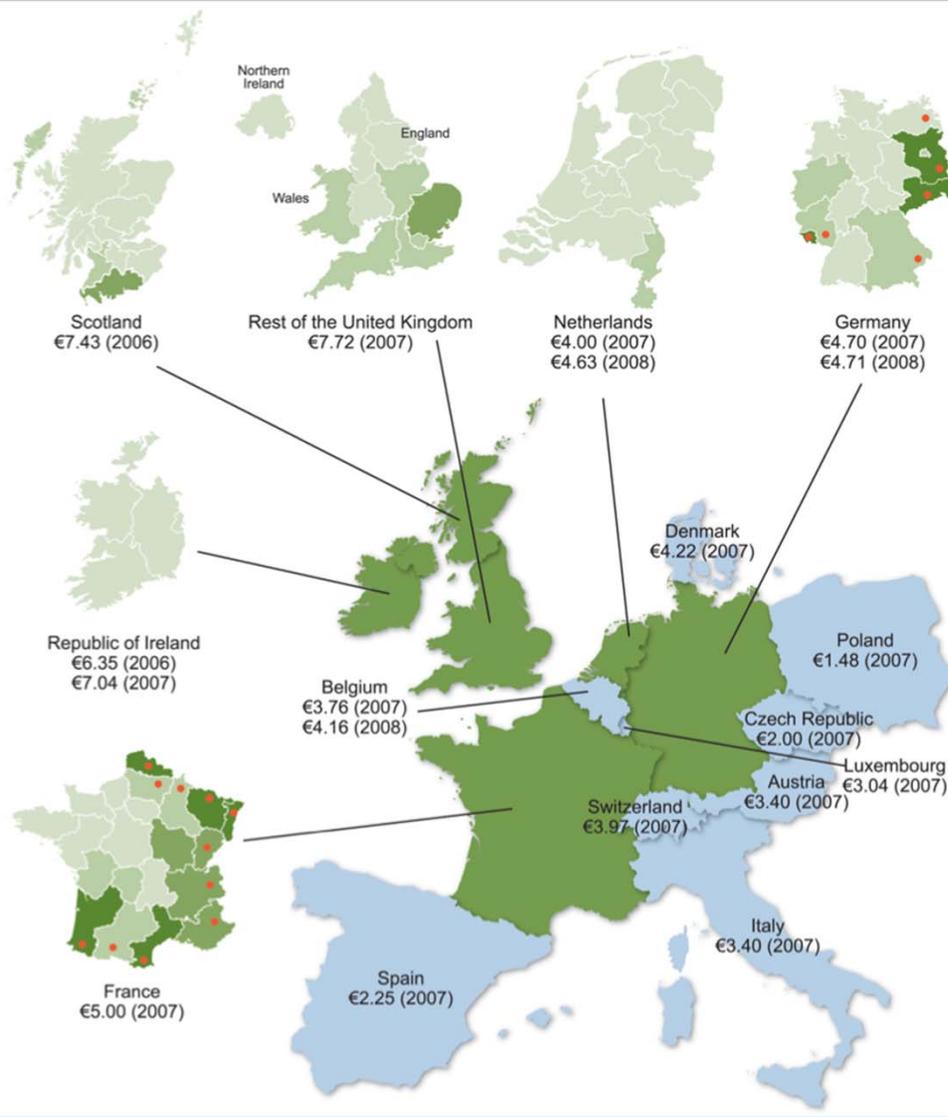
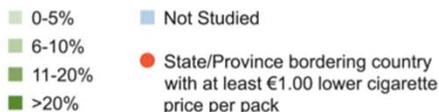
Source, ITC project, various countries, multiple waves



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.

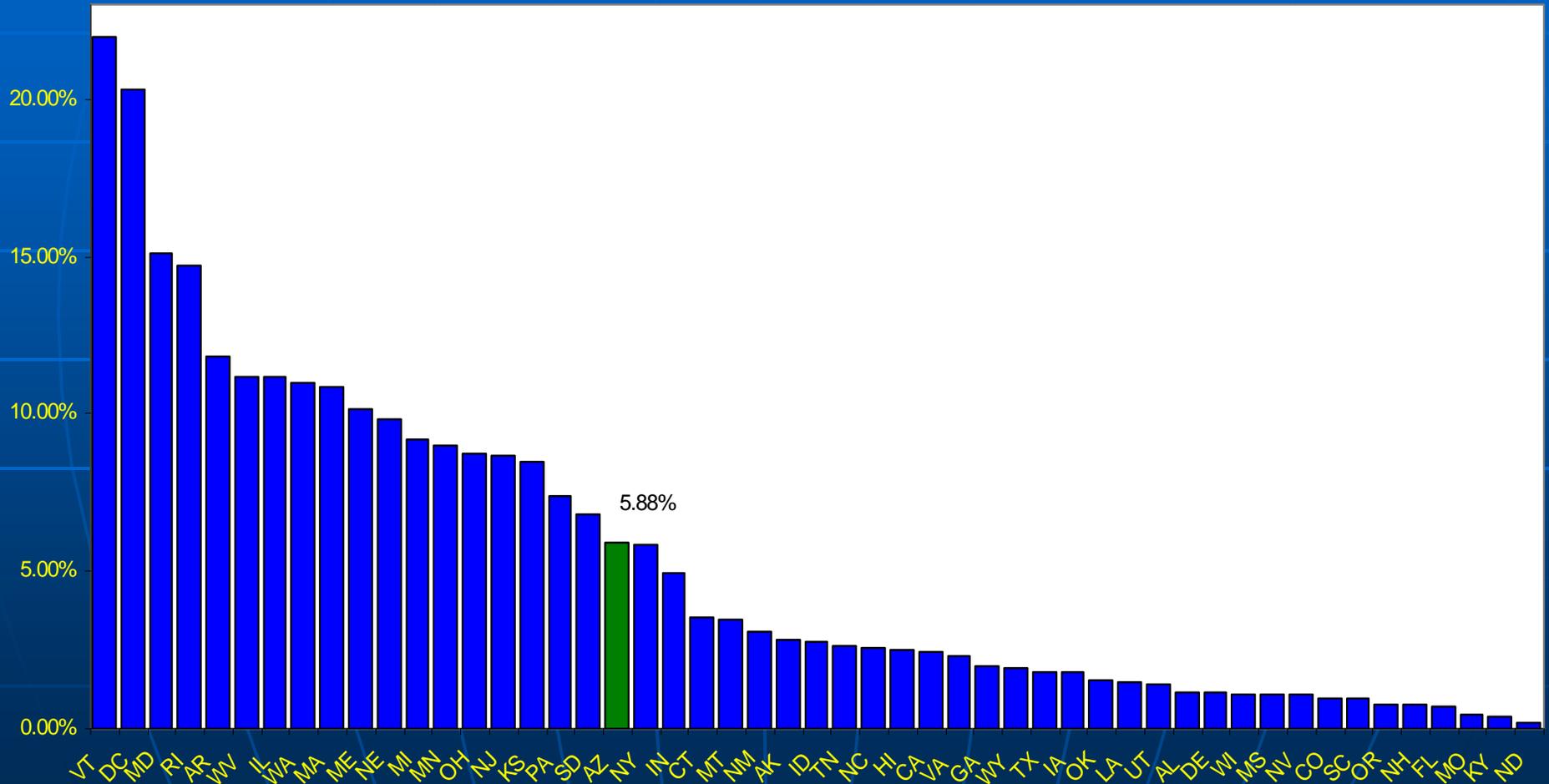
**Need to harmonize prices**

# 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

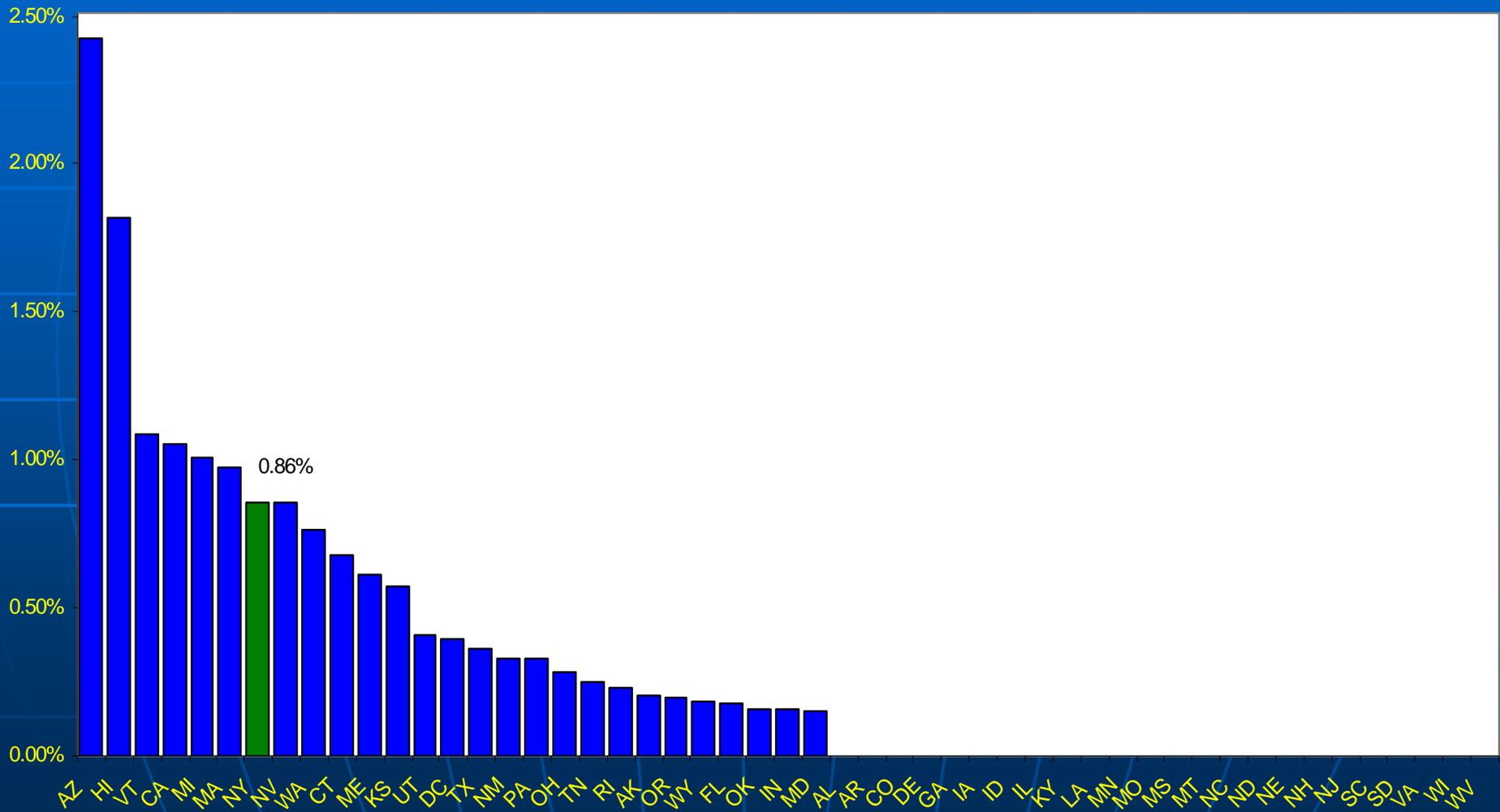
% Tax Avoiders, 2006/07



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

# Tax Avoidance – United States

% Other Tax Avoiders, 2006/07



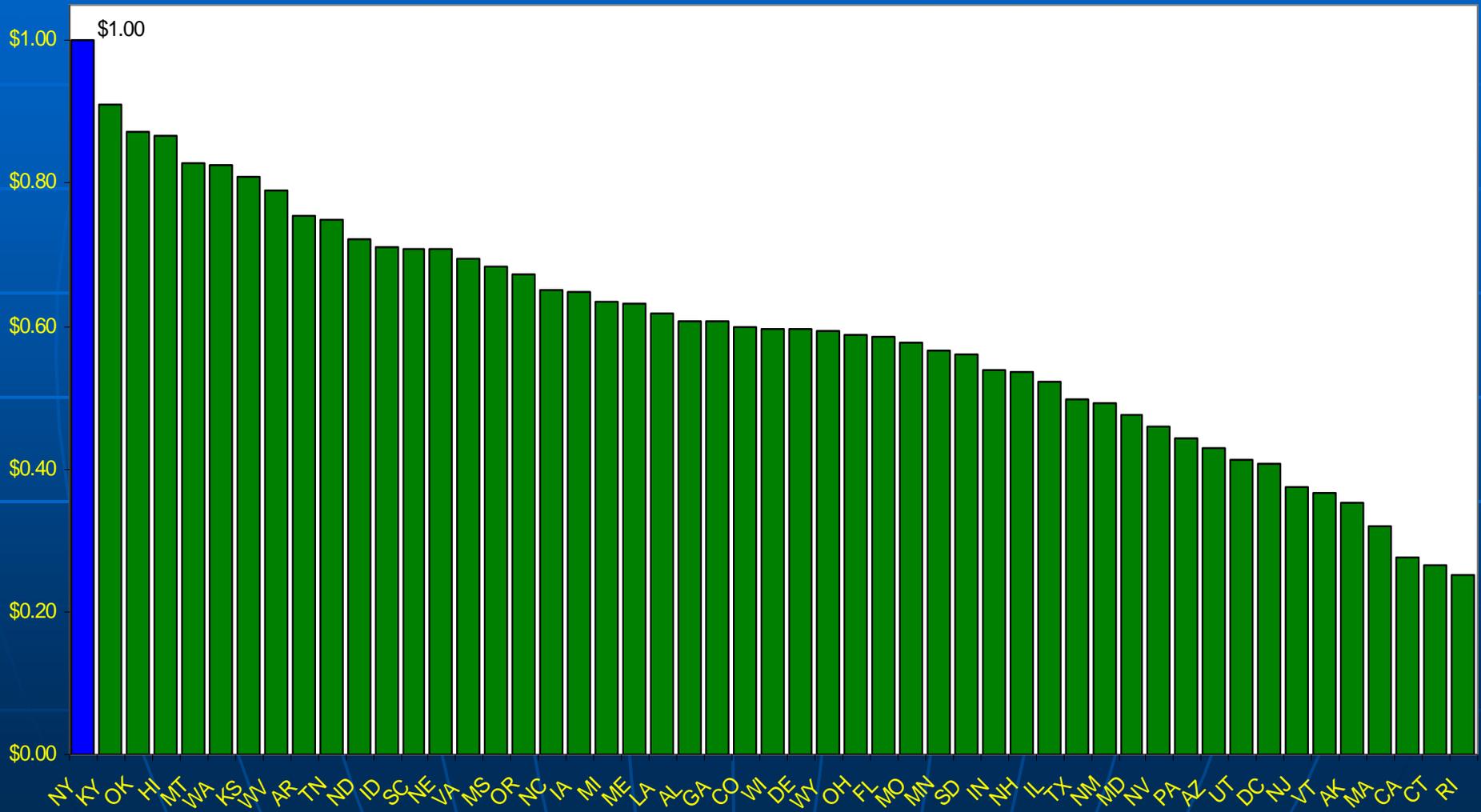
Source: Tax Burden on Tobacco, 2008 and TUS-CPS

# 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

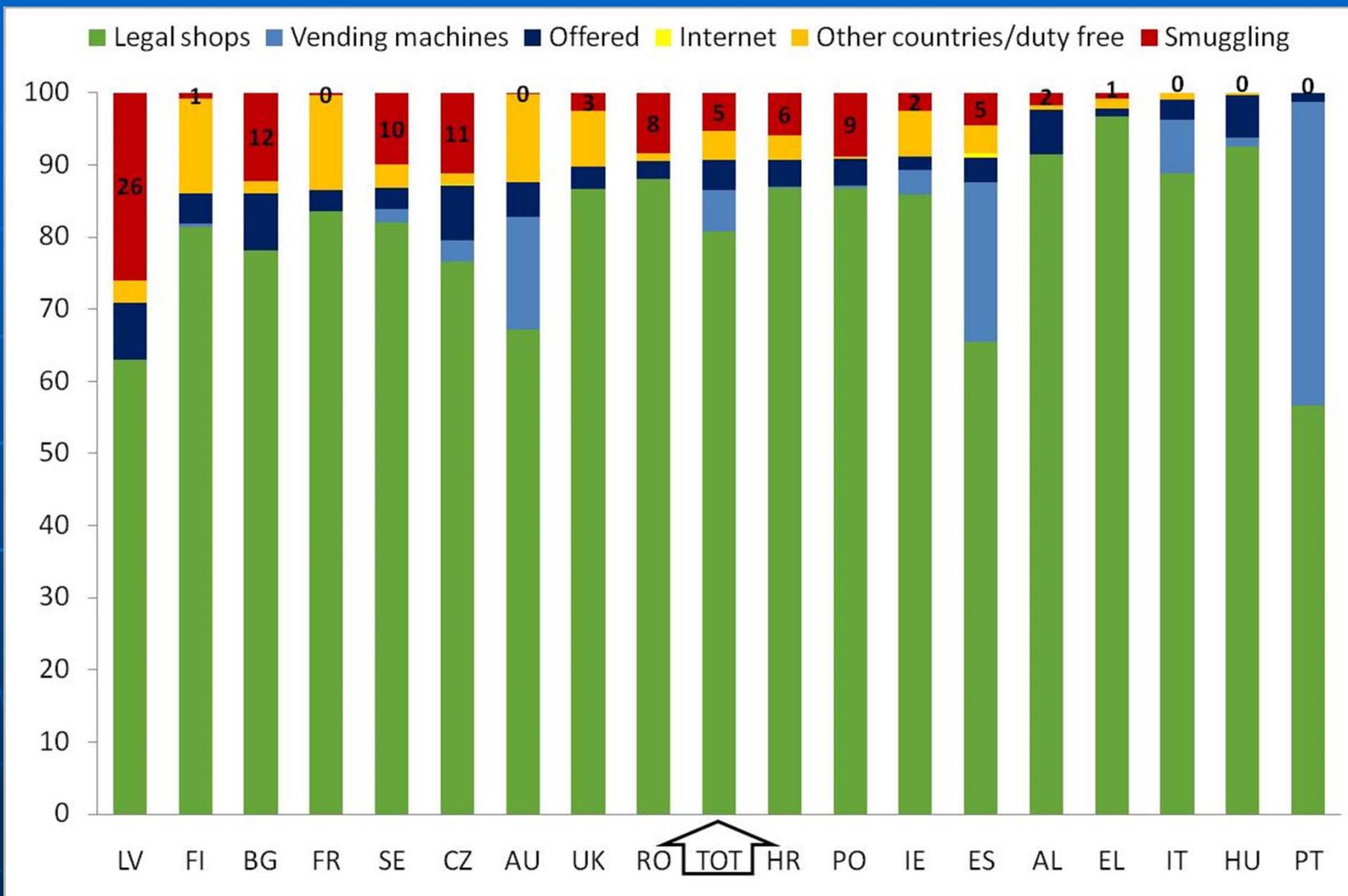
# EU Tobacco/Economics Survey

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 ( <i>full price</i> ) [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



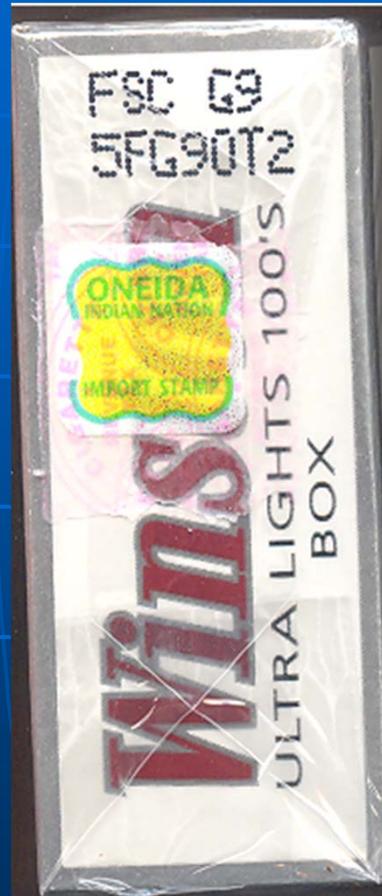
# Measuring Avoidance & Evasion

- 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



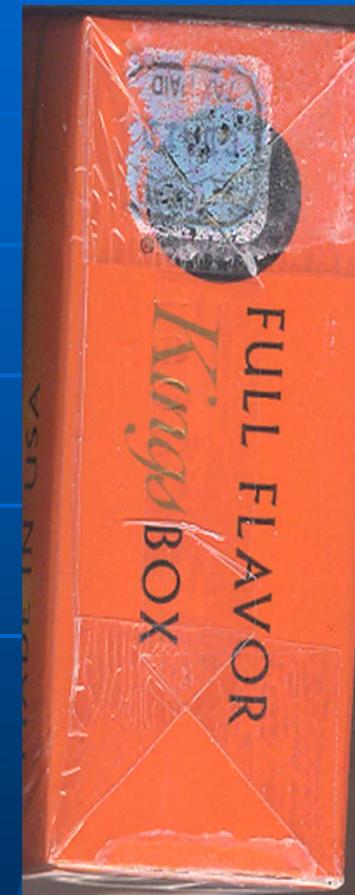
Likely Legitimate  
State Tax Stamp



Non-State  
Stamp

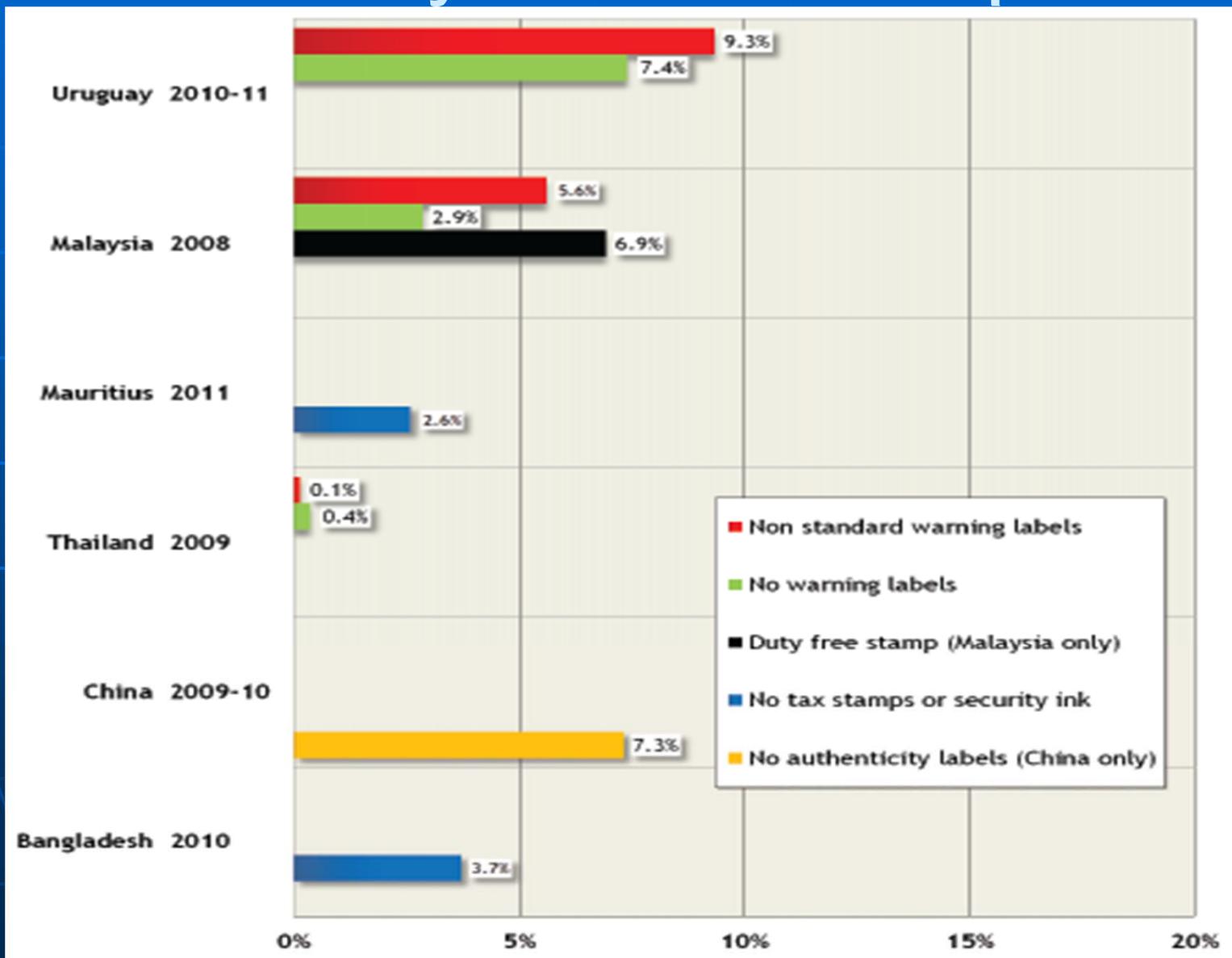


No Tax Stamp



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?

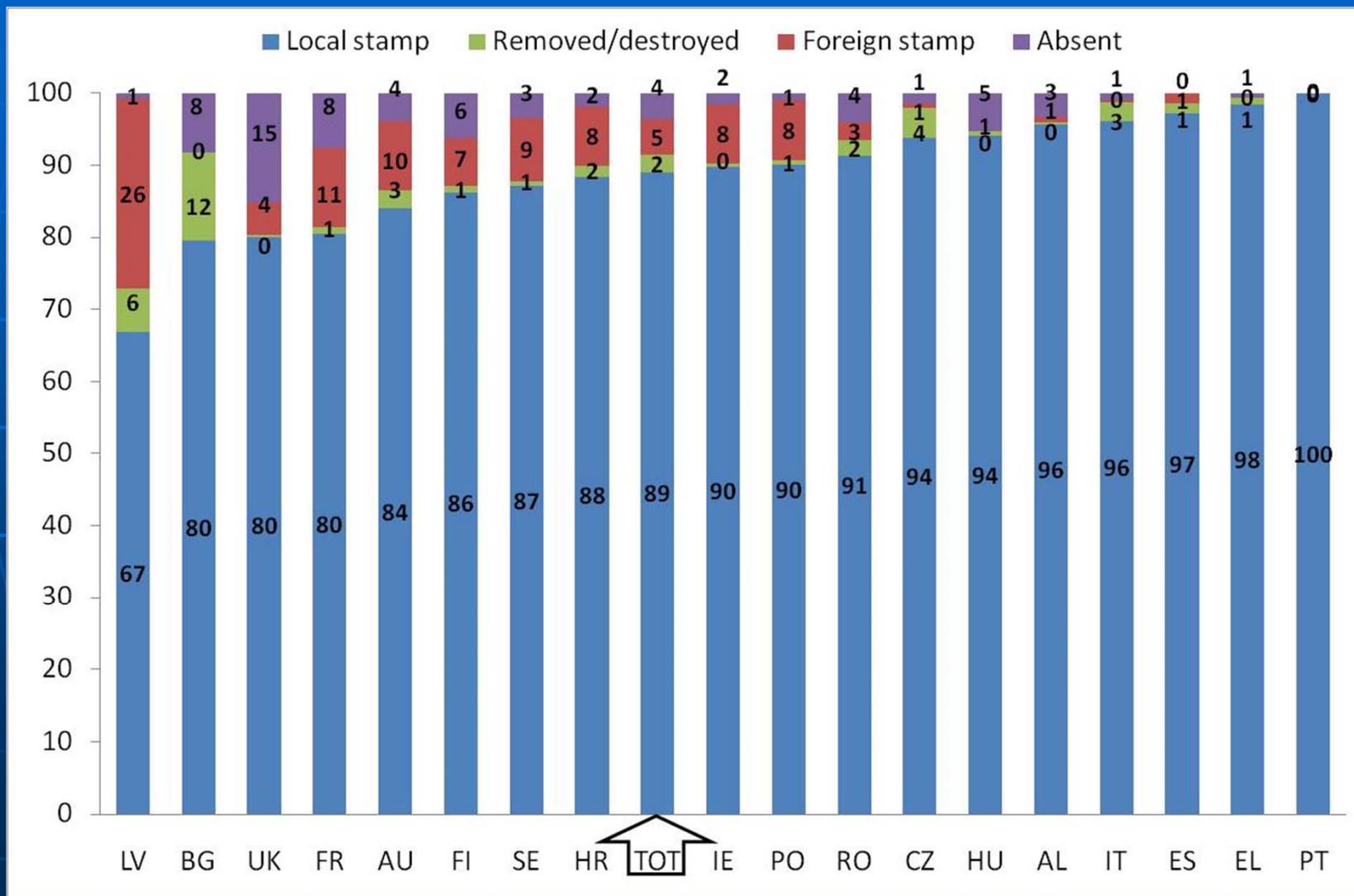
No 1  
Yes 2

**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

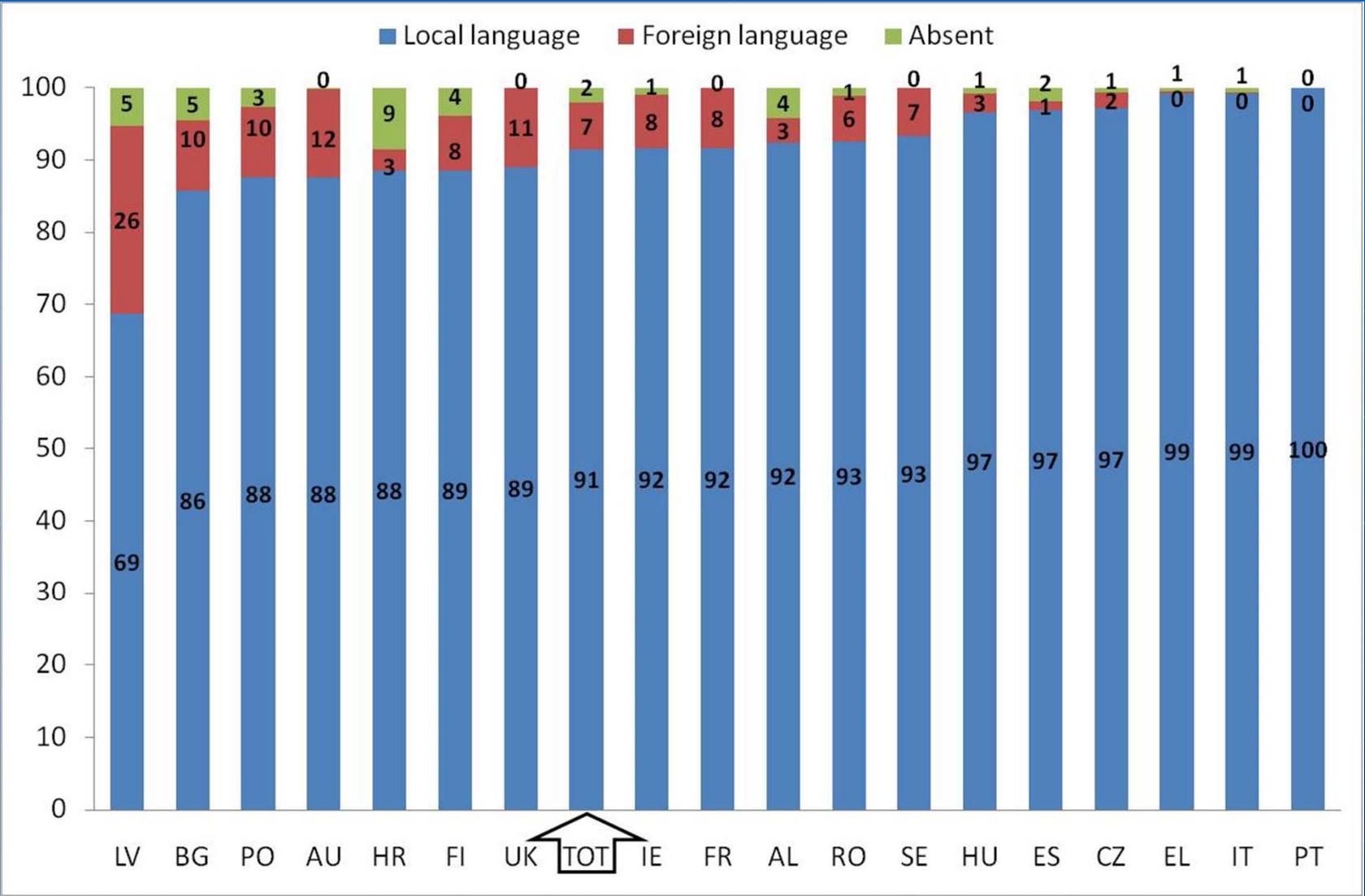
Health warnings in **[country specific]** language 1

Health warnings in foreign language

Lack of health warnings

2  
3

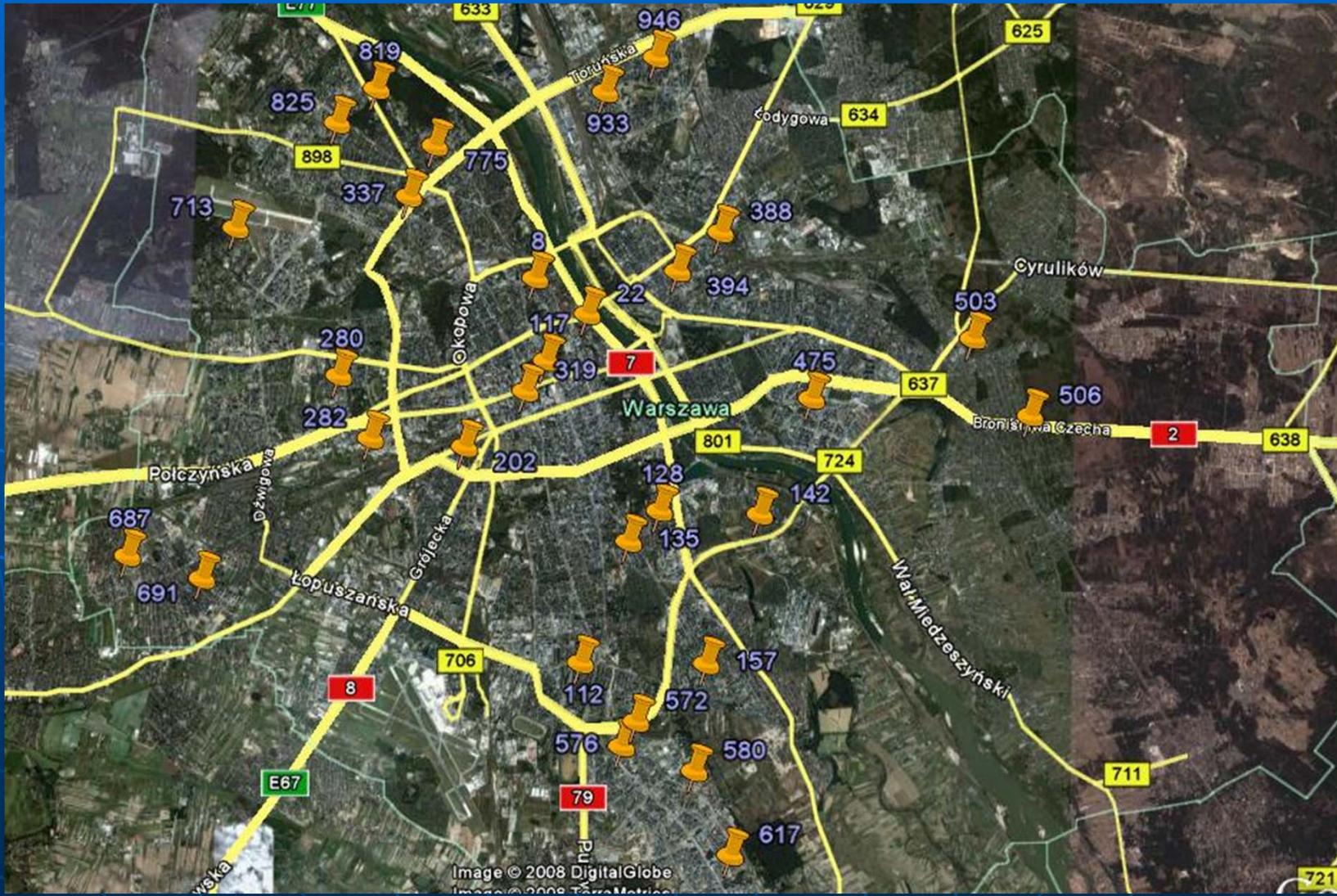
# EU Tobacco/Economics Survey



# 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)	Unweighted 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

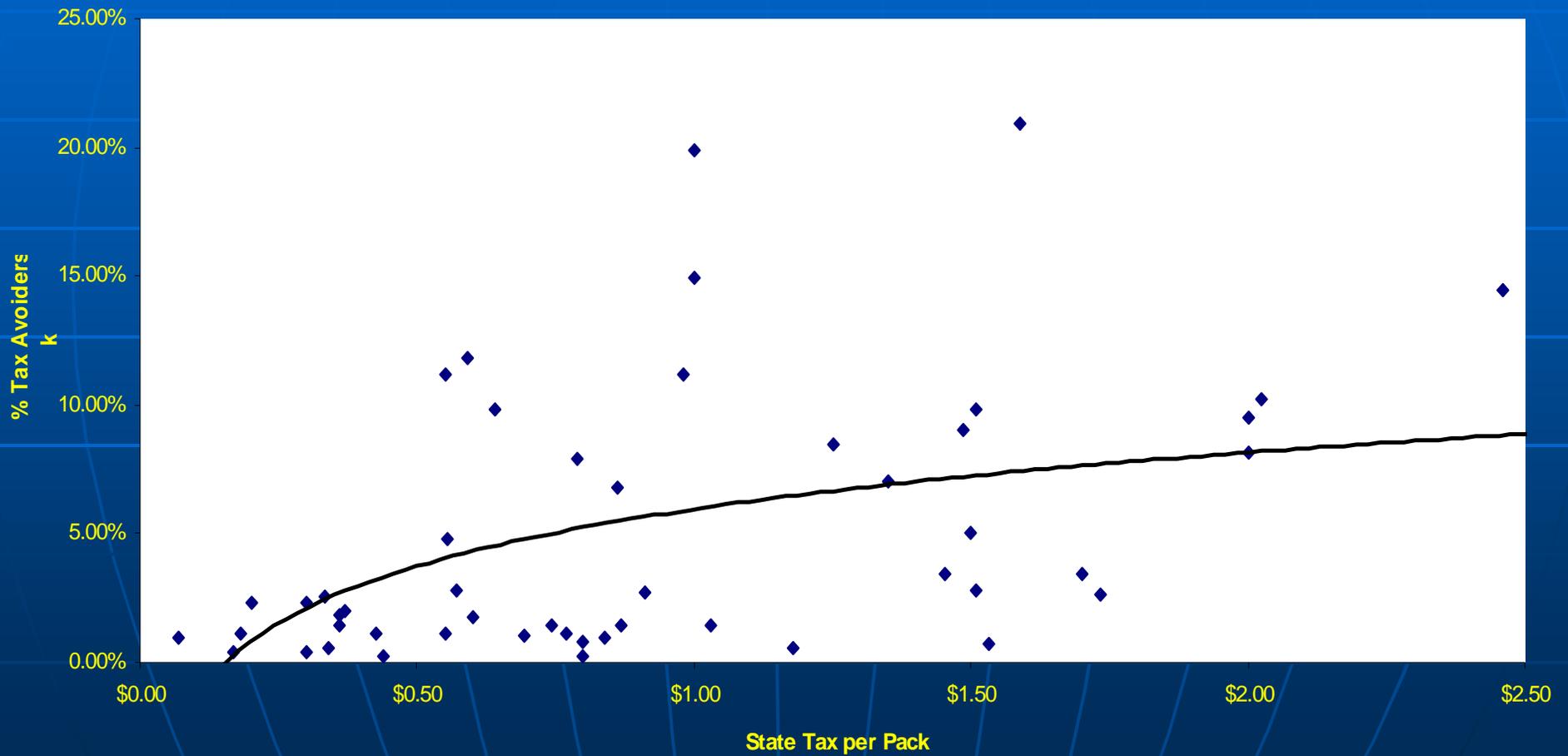
# Determinants of Tax Avoidance/Evasion

# 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

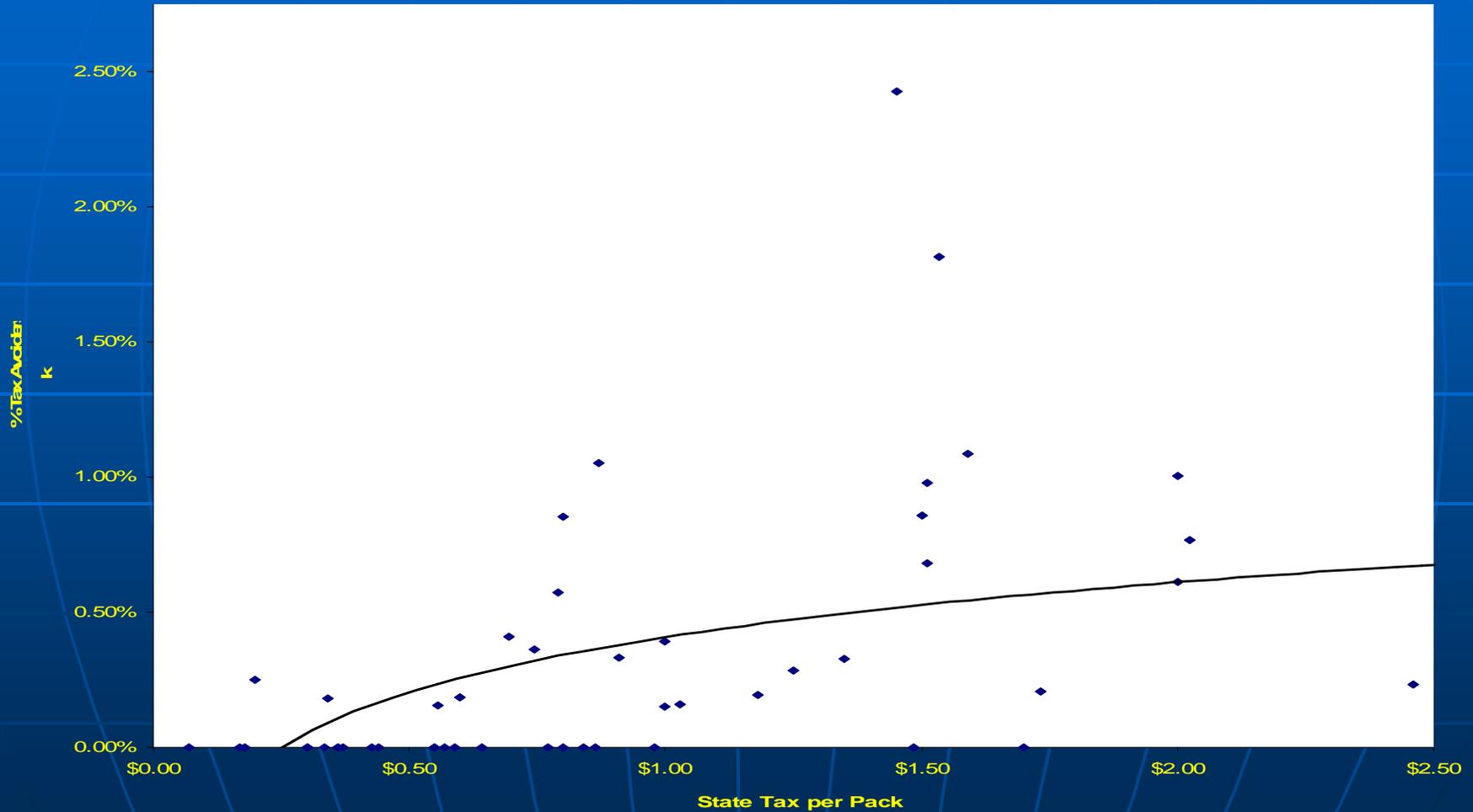
Cross Border Tax Avoidance and State Cigarette Taxes, 2006/07



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

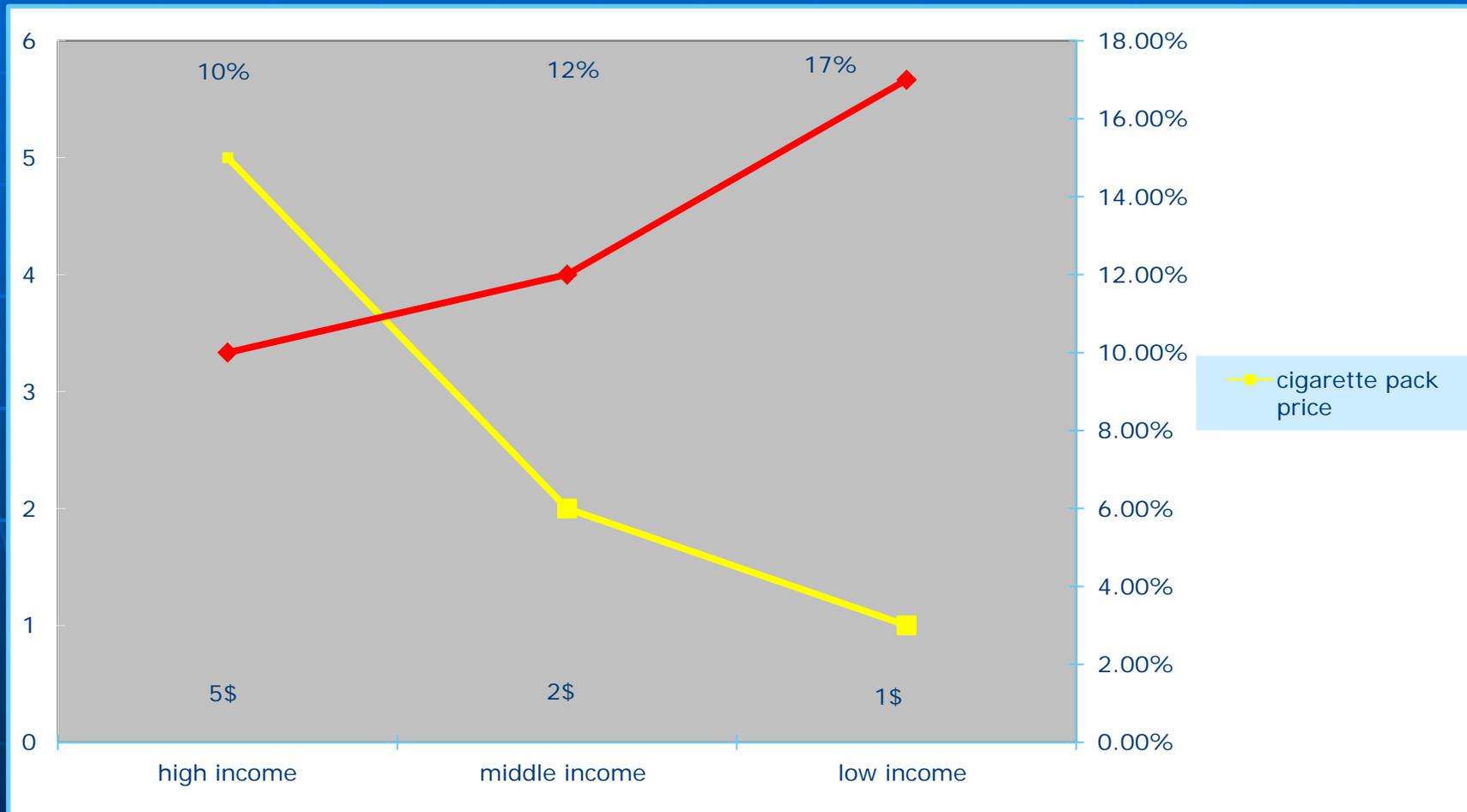
# Tax Avoidance – United States

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.



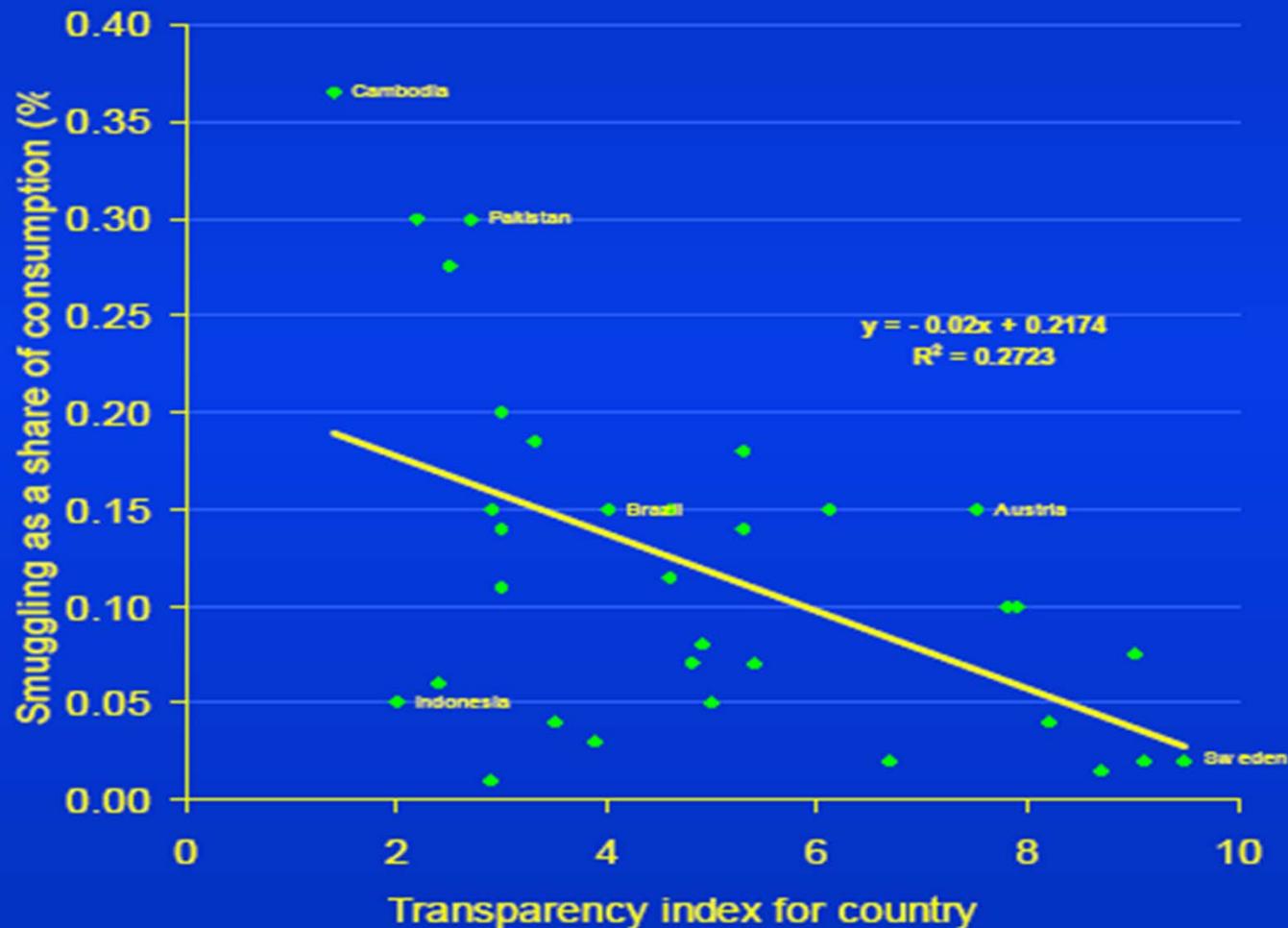
Source: WHO & IUATLD, 2009

# 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

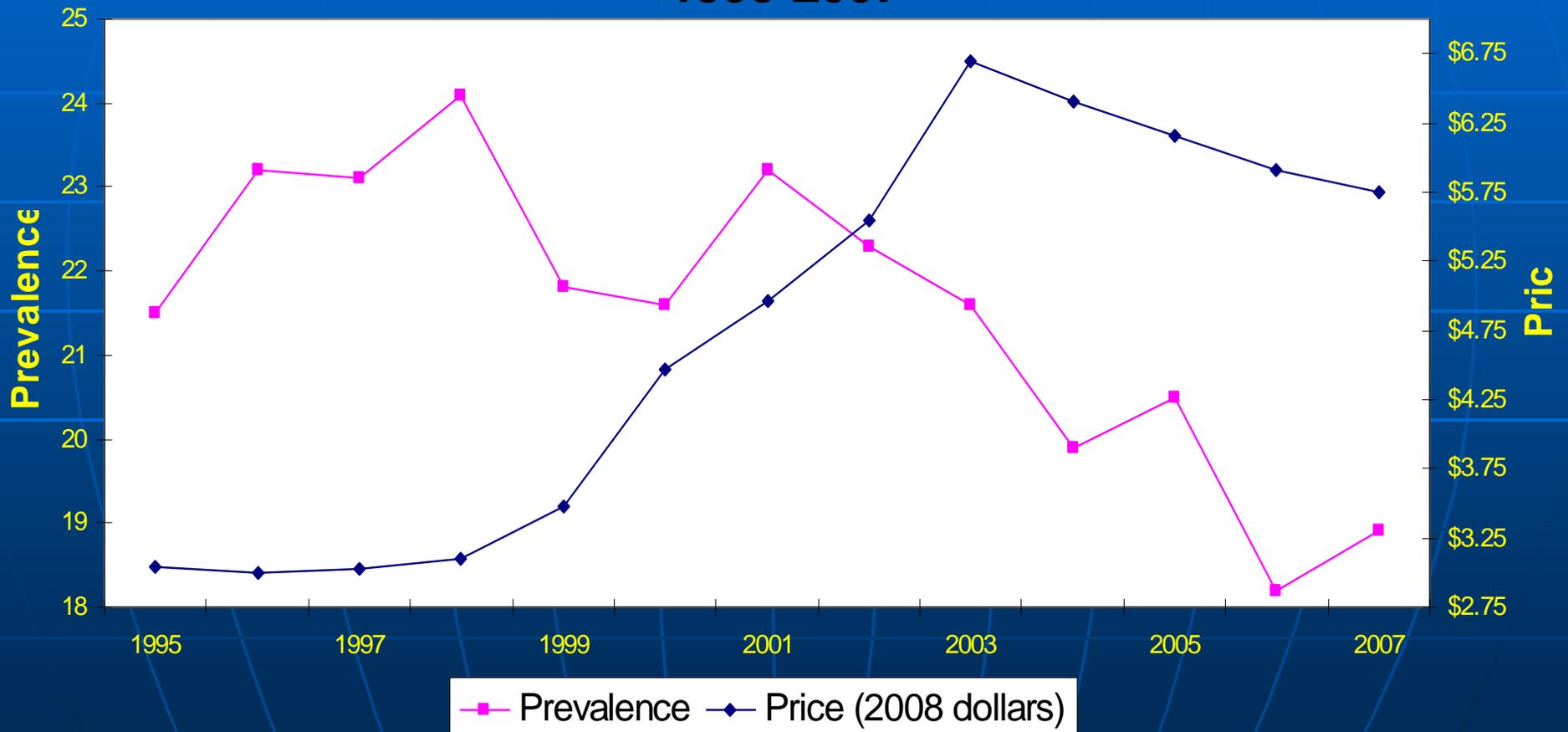
**Table 2: Odds of purchasing latest pack (of cigarettes or HRT) from an illegal source: environmental determinants**

Covariates	N	% smuggling	Illegal vs legal sources OR (95% CI)**	p-value
<b>Distance</b>				
Far/close	3503	4.2	1*	
Border	1342	10.8	1.36(1.04-1.78)	0.02
<b>Corruption</b>				
Low/Medium	2233	3.0	1*	
High	2612	8.7	0.94 (0.64-1.36)	0.74
<b>Average Price</b>				
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

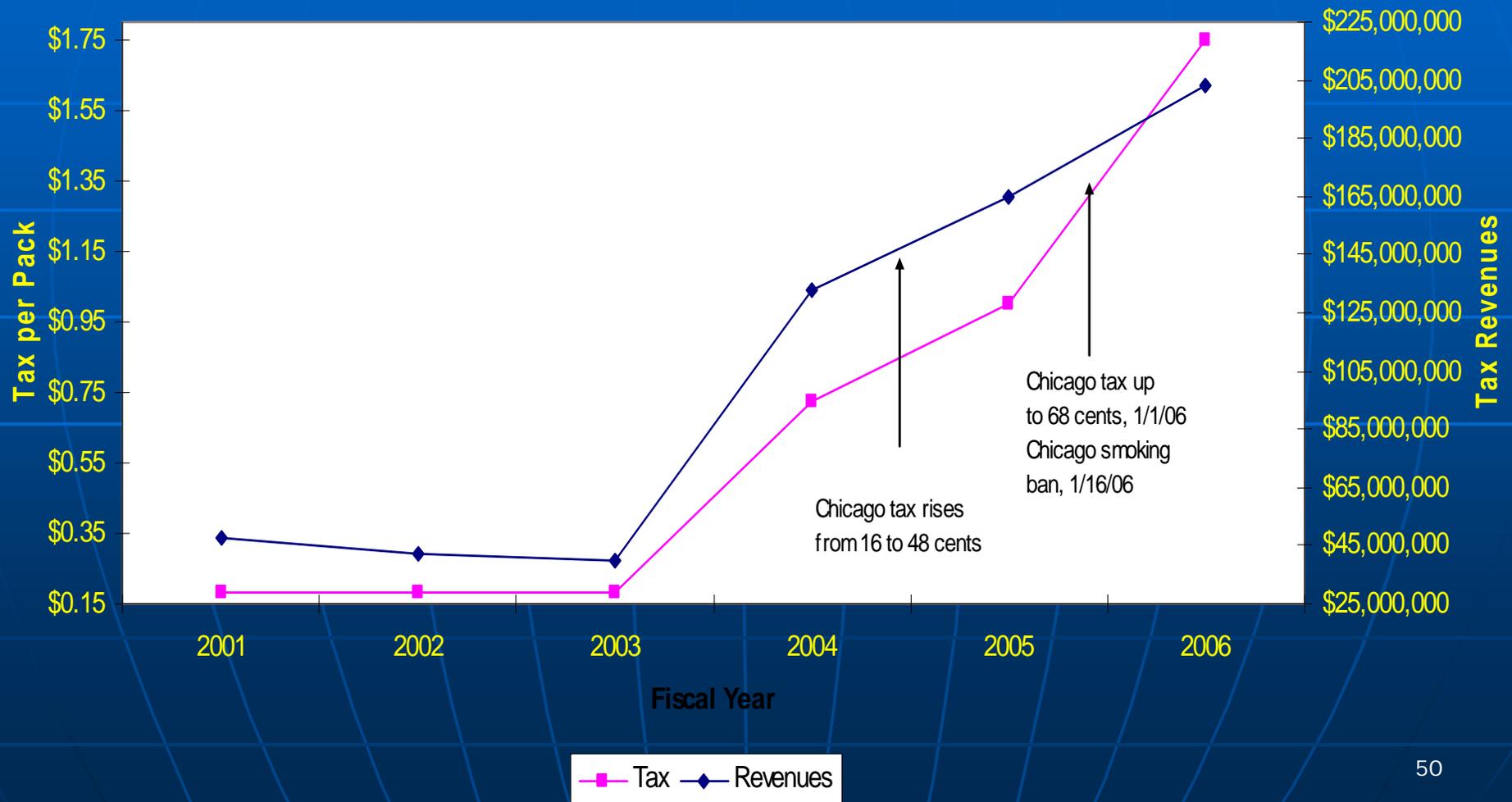
## Cigarette Prices and Adult Prevalence, New York, 1995-2007



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
<b>Illicit cigarette trade: current situation</b>			
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
<b>If this illicit trade were eliminated</b>			
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

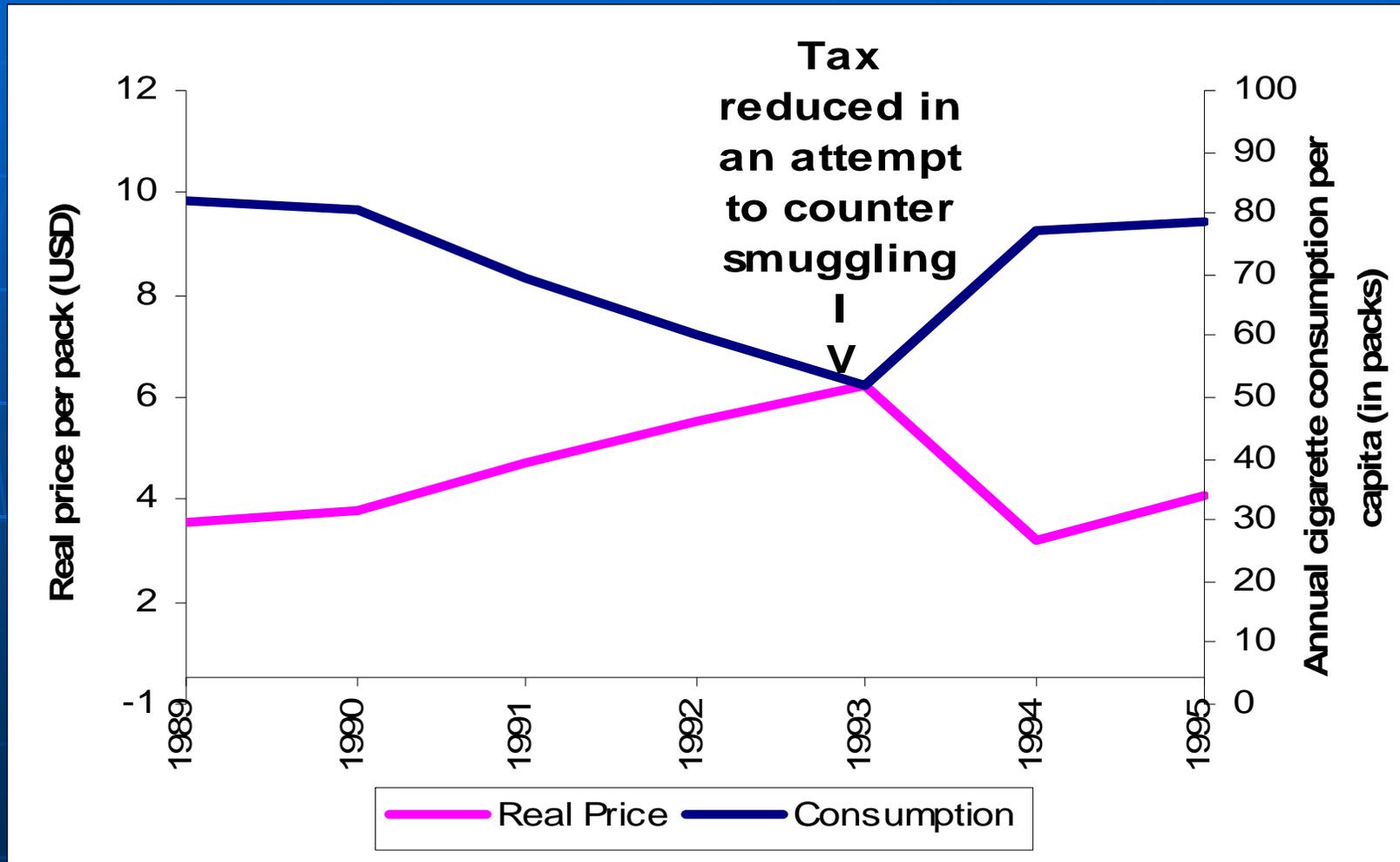
Source: Joossens et al., 2010

# 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

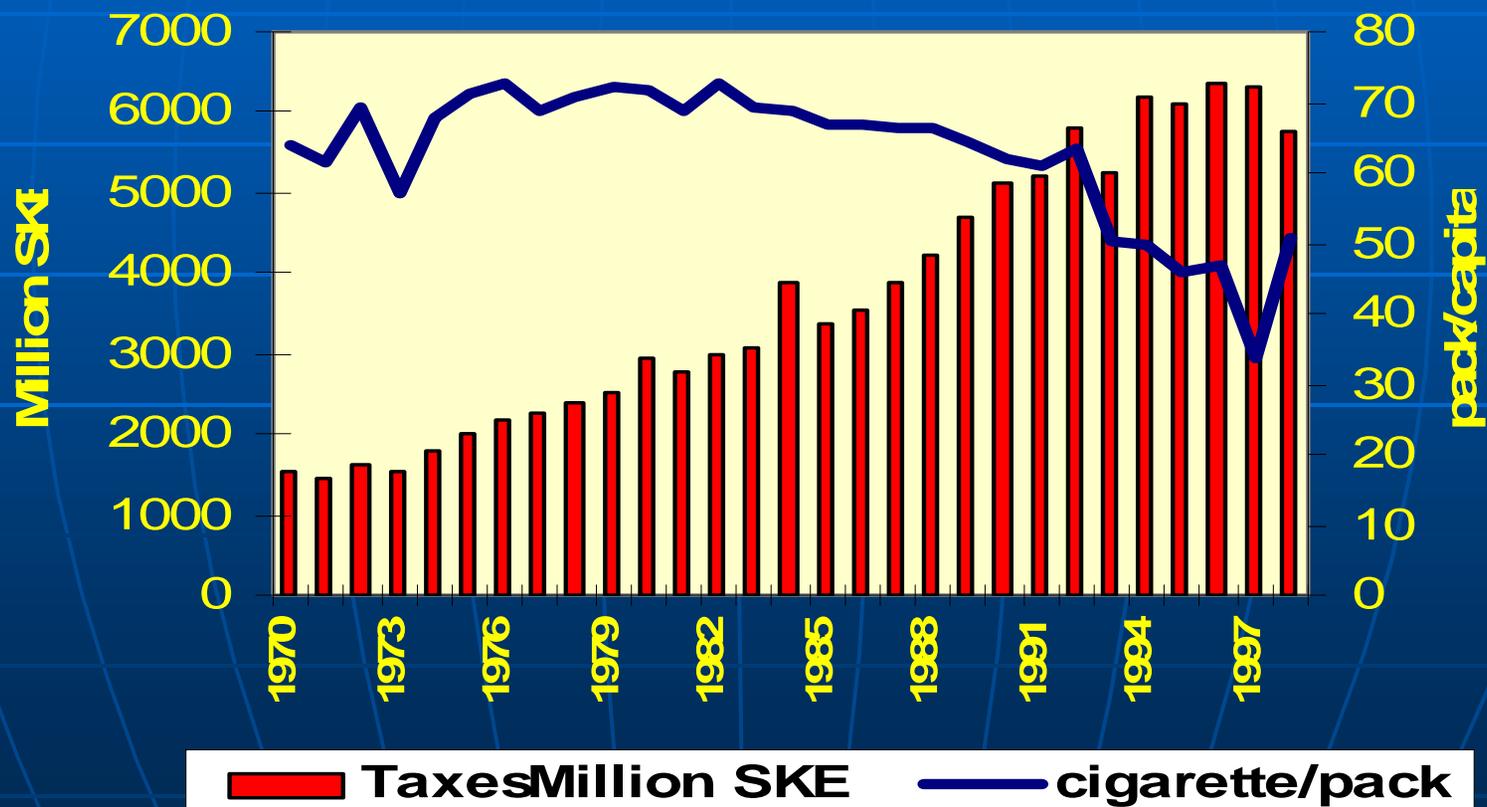
# Government Responses: Canada, 1990s



Source: World Bank, 2003

# Government Responses: Sweden, 1998

## Cigarette Tax Revenue and Consumption in Sweden, 1970-1998

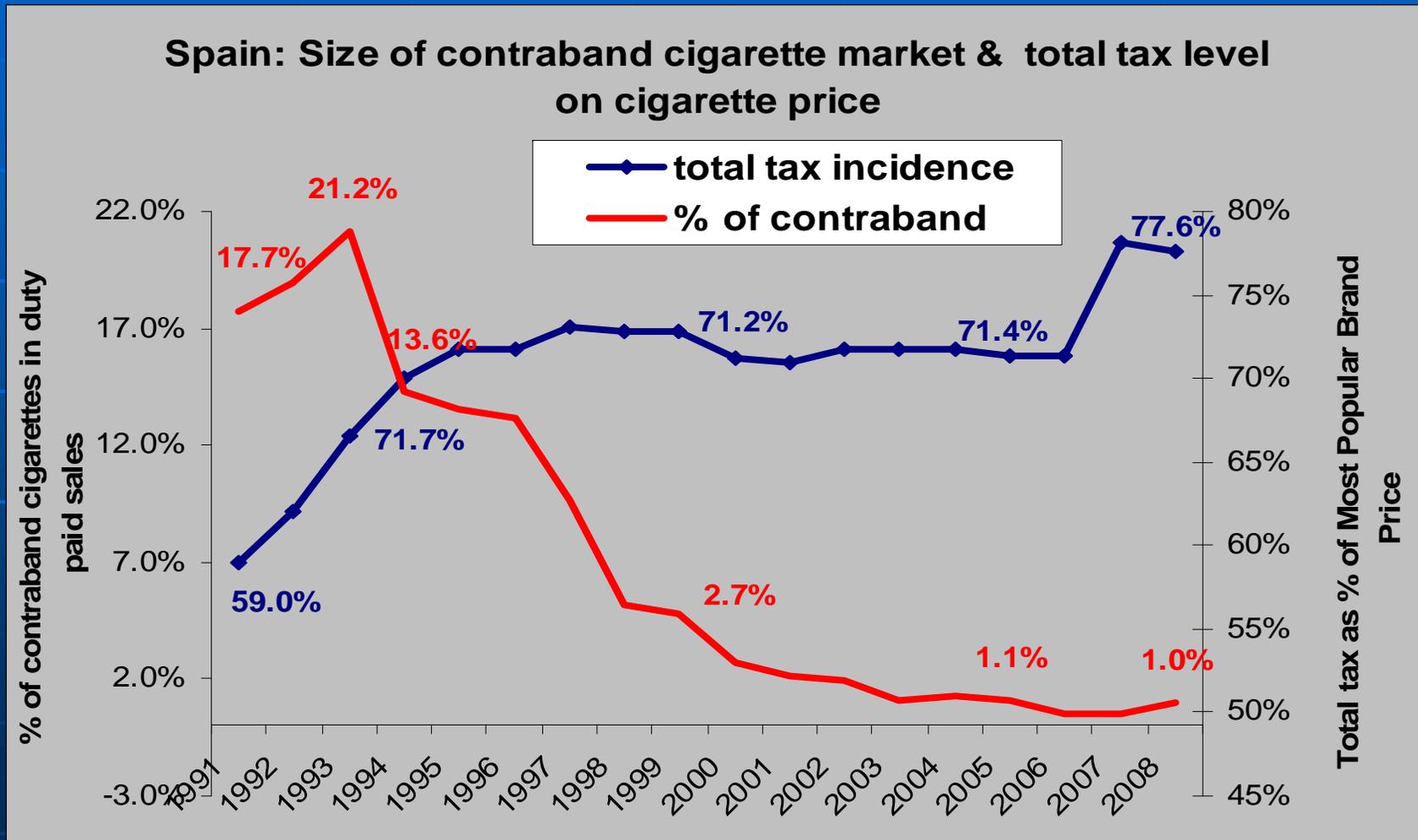


# Combating Illicit Trade

## ■ Spain

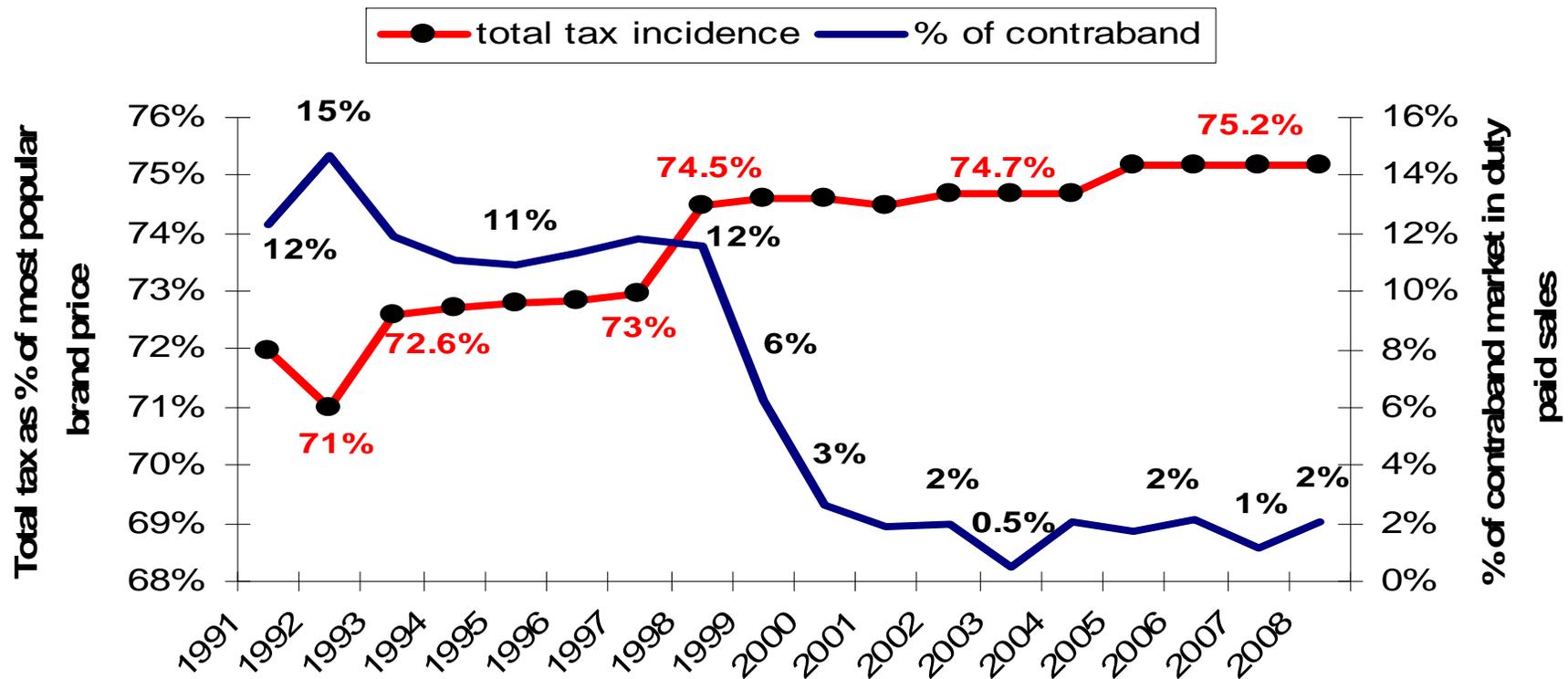
- Reduced share of smuggled cigarettes from estimated 15% in 1995 to 5% in 1999
  - Focus on large scale, container smuggling
  - Strengthened tax administration with new technology and better enforcement
  - Collaboration with France, Andorra, Ireland, UK and the EU Anti-Fraud Office
  - Did NOT focus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

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[www.tobacconomics.org](http://www.tobacconomics.org)

(coming soon)