

Tobacco Control in Developing Countries



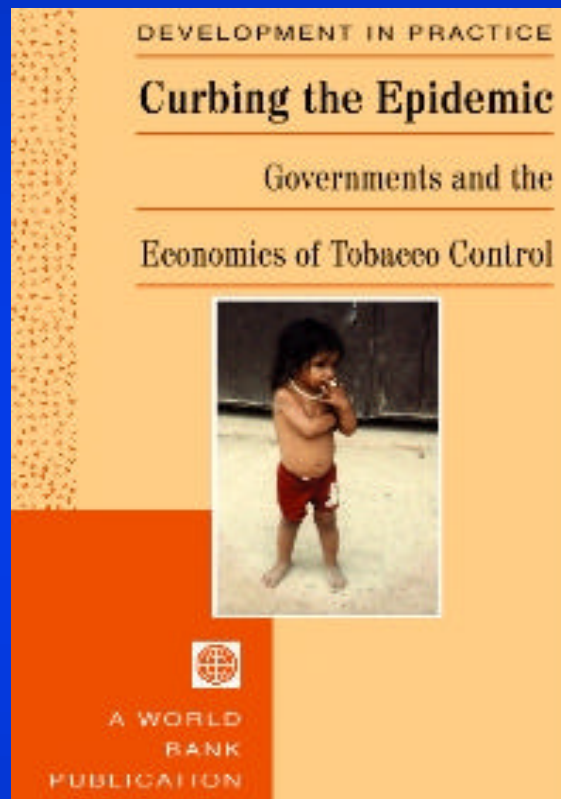
The World Bank



World Health Organization

Curbing the Epidemic

Governments and the Economics of Tobacco Control



The World Bank

Why this book?

Economic arguments around tobacco control are unclear and often debated

- In 1996, an Asian Health Minister stated "cigarette producers are making large contributions to our economy... we have to think about workers and tobacco farmers"
- In 1997, *The Economist* commented "most smokers (two-thirds or more) do not die of smoking-related disease. They gamble and win. Moreover, the years lost to smoking come from the end of life, when people are most likely to die of something else anyway"

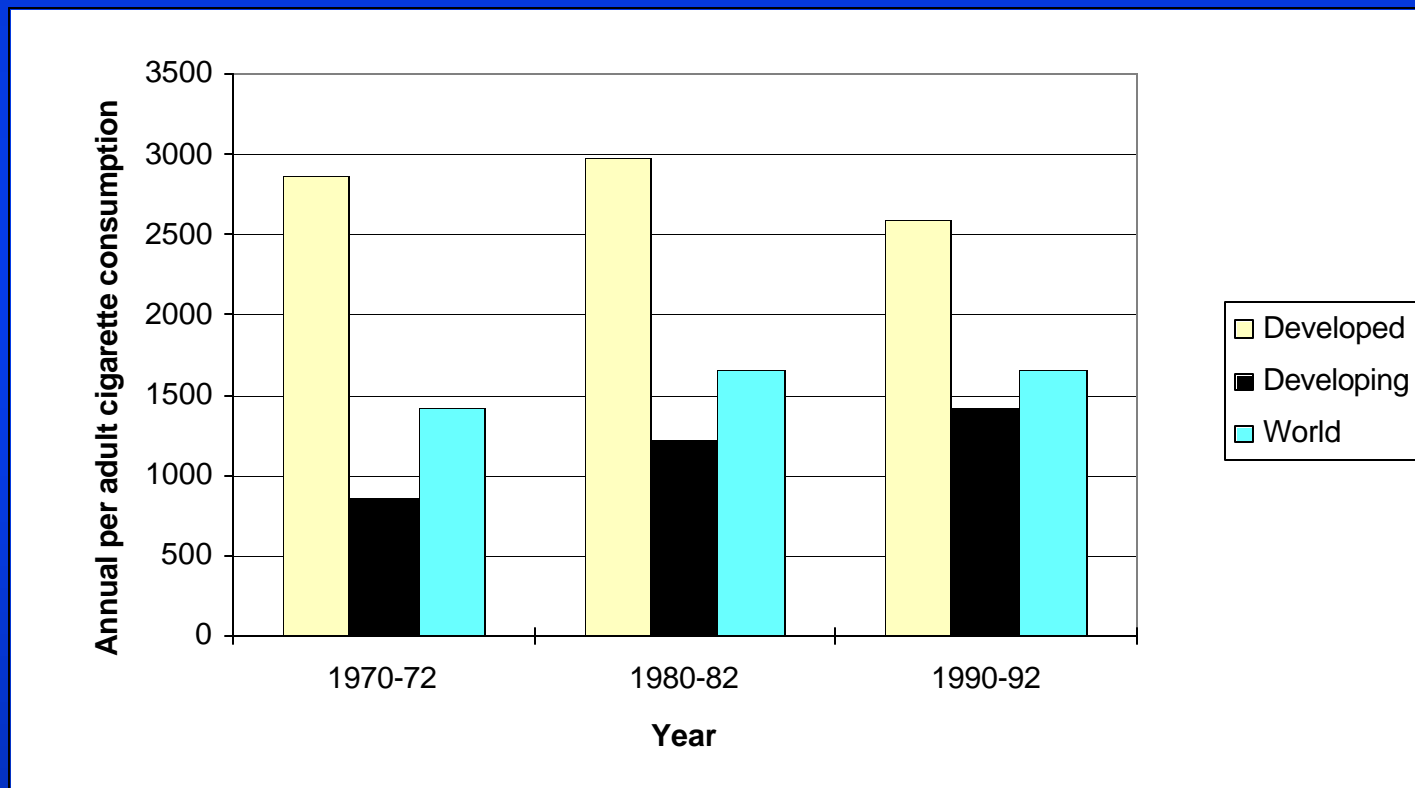
Methodology

- Consultation workshops: Washington D.C. 1996, Beijing 1997, Cape Town 1998
 - ◆ Cape Town Proceedings published in 1998
- 19 Background papers
 - ◆ 40 economists, epidemiologists, and control experts from 13 countries.
 - ◆ Reviews of literature
 - ◆ New analyses
 - ◆ 2 rounds of peer review
- Synthesized in World Bank Report "Curbing the Epidemic"

Outline of Book

- Tobacco use and its consequences
- Analytics of tobacco use
- Demand for tobacco
- Supply of tobacco
- Policy directions

Per capita cigarette consumption has increased in developing countries



Source: WHO 1997

Large and growing number of deaths from smoking

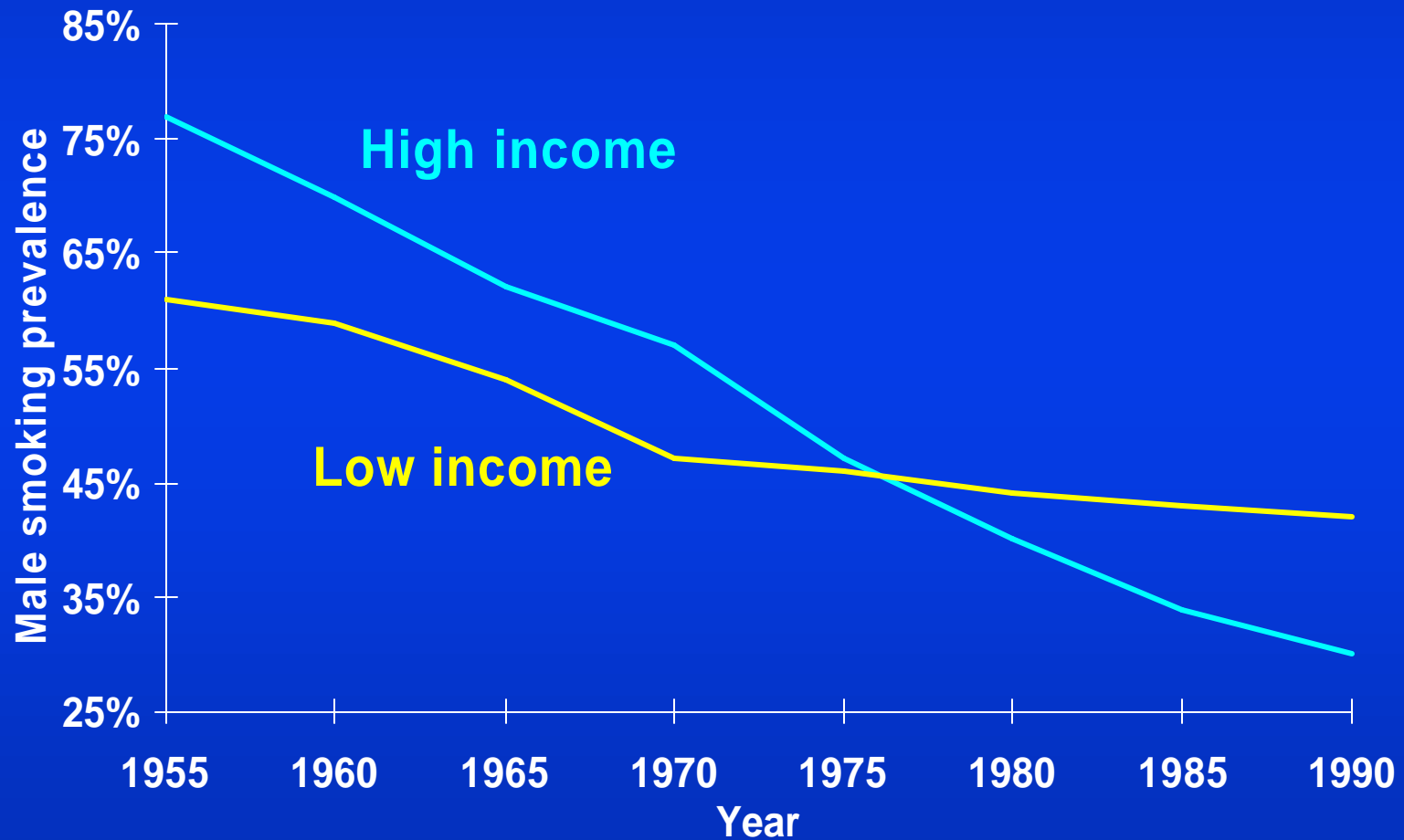
Past and future tobacco deaths (in millions)

| <u>Time</u> | <u>Millions of deaths</u> |
|-------------|----------------------------------------|
| 1901-2000 | 100 (mostly in developed countries) |
| 2001-2100 | 1,000 (mostly in developing countries) |

- ◆ 500 M among people alive today
- ◆ 1 in 2 of long-term smokers killed by their addiction
- ◆ 1/2 of deaths in middle age (35-69)

Source: Peto and Lopez, 2000

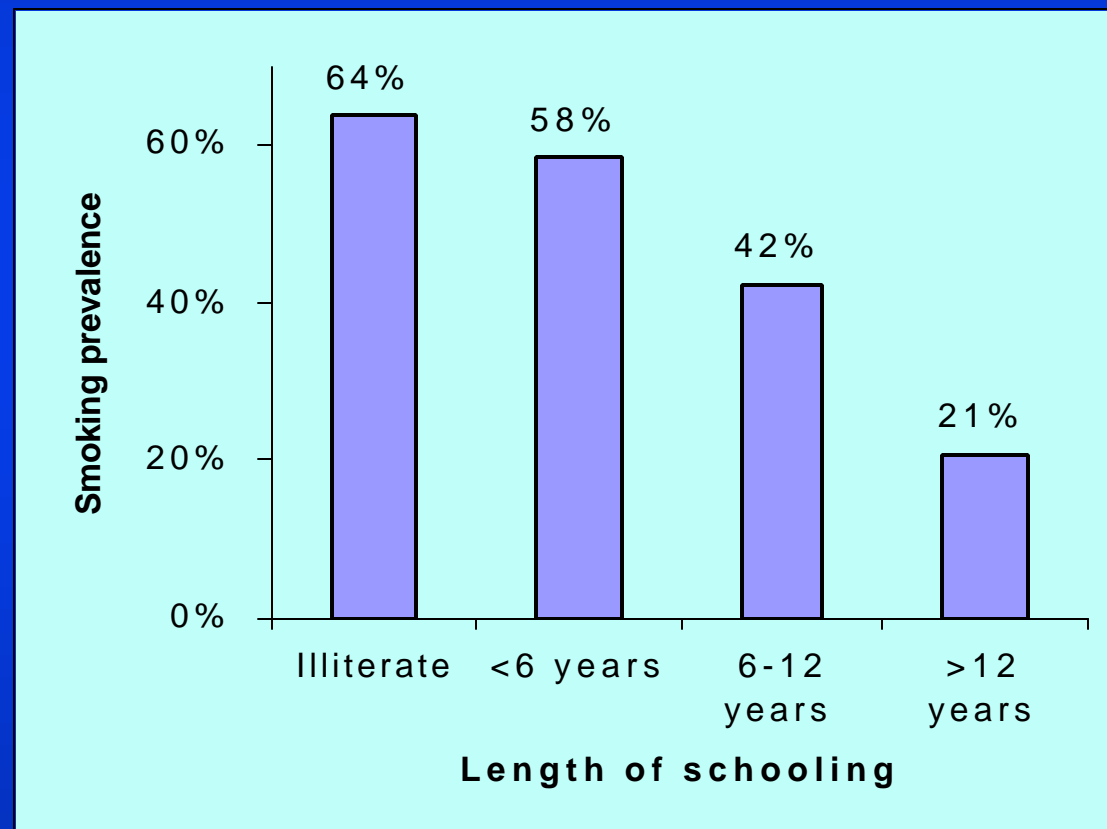
Trends in Smoking in Norwegian Males by Income Group



Source: Lund *et al.*, 1995

Smoking is more common among the less educated

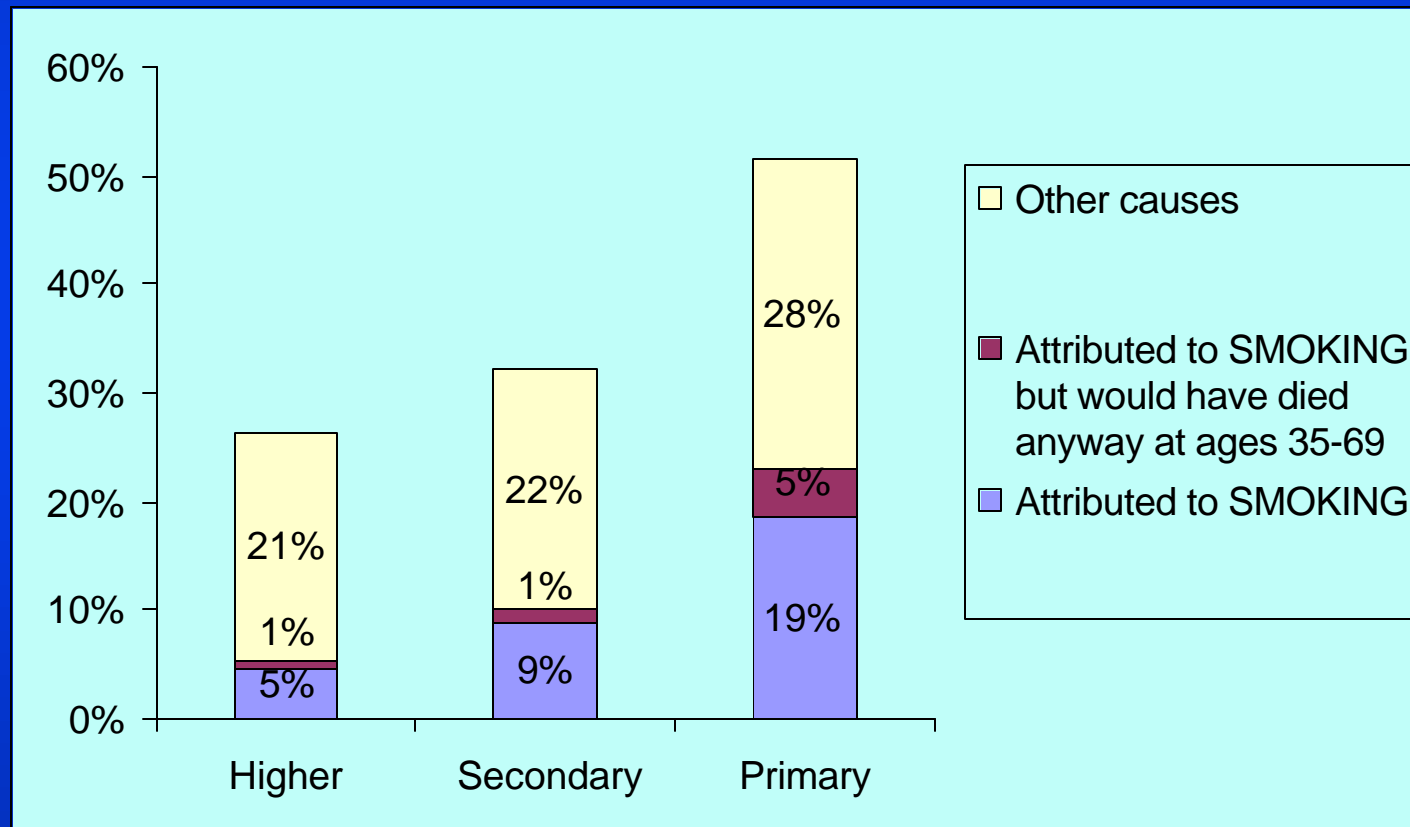
Smoking prevalence among men in Chennai, India, by education levels



Source: Gajalakshmi and Peto 1997

Smoking accounts for much of the mortality gap between rich and poor

Risk of death of a 35 year old male before age 70, by education levels in Poland, 1996



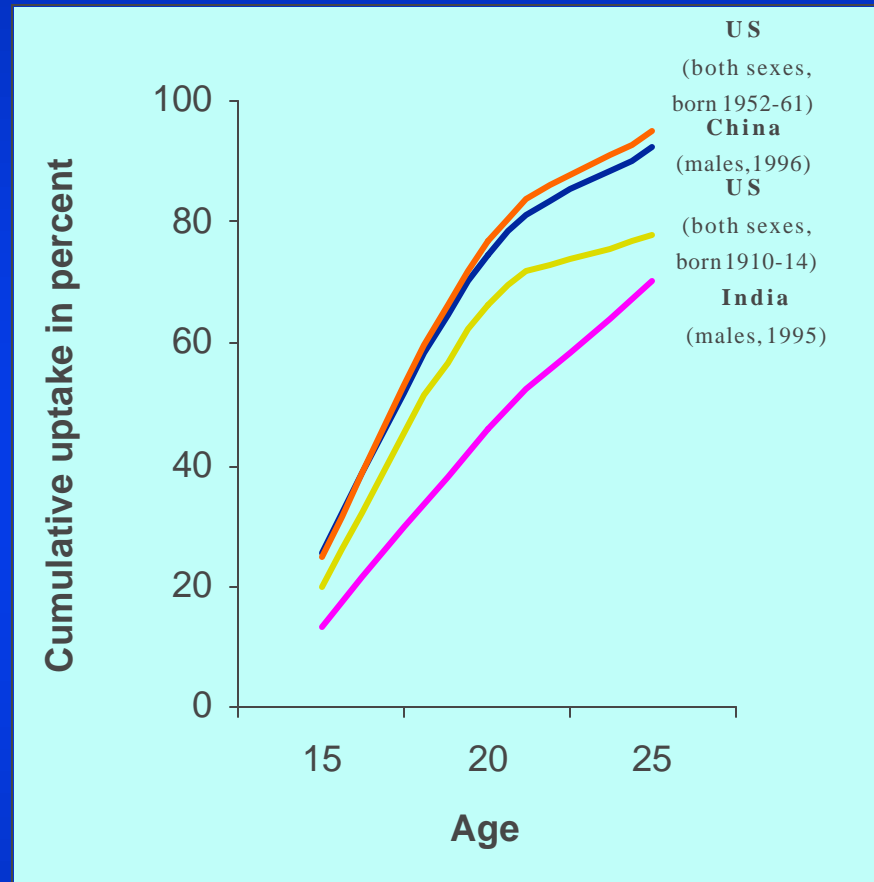
Source: Bobak *et al.*, 2000

Why should governments intervene?

Economic rationale or “market failures”

- Smokers do not know their risks
- Addiction and youth onset of smoking
 - ◆ Lack of information and unwillingness to act on information
 - ◆ Regret habit later, but many addicted
- Costs imposed on others
 - ◆ Costs of environmental tobacco smoke and health costs

Tobacco addiction starts early in life



- **Every day 80,000 to 100,000 youths become regular smokers**

Source: Chinese Academy of Preventive Medicine 1997, Gupta 1996, US Surgeon General Reports, 1989

Underestimated risks of smoking

- ◆ 7 in 10 of Chinese smokers thought smoking does them "little or no harm"
- ◆ Risks not internalized: personal risks perceived lower than average risks
- ◆ Risks of addiction downplayed: only 2 in 5 of US adolescents intending to quit actually do
 - ◆ in high-income countries, 7 in 10 smokers wish they had not started

Source: Kenkel and Chen, 2000; Weinstein, 1998; SGR, 1989 and 1994

Smoking versus other risks (alcohol, fast driving)

- ◆ Risk of addiction is greater for smoking
- ◆ No “learning” from youthful excesses
- ◆ Risk of death from smoking is much higher: of 1000 males smokers aged 15
 - ◆ 125 die from smoking in middle-age
 - ◆ 20 die from road accidents or violence (30 from all alcohol-related conditions)

Healthcare costs from smoking

- Annual (gross) healthcare costs:
 - ◆ 0.1-1.1% of GDP, or 6 -15% of total health costs in high-income countries
 - ◆ proportionally similar in lower-income countries
- Net (lifetime) healthcare costs:
 - ◆ Differences in lifetime costs are smaller than annual costs
 - ◆ Best studies do suggest there are net lifetime costs
 - ◆ Pension or “smokers pay their way” arguments are complex

Source: Lightwood *et al.*, 2000

Government roles in intervening

- To deter children from smoking
- To protect non-smokers from others' smoke
- To provide adults with necessary information to make an informed choice
- ◆ *First-best instrument, such as youth restrictions, are usually ineffective. Thus, tax increases are justified, and are effective.*
- ◆ *Tax increases are blunt instruments.*

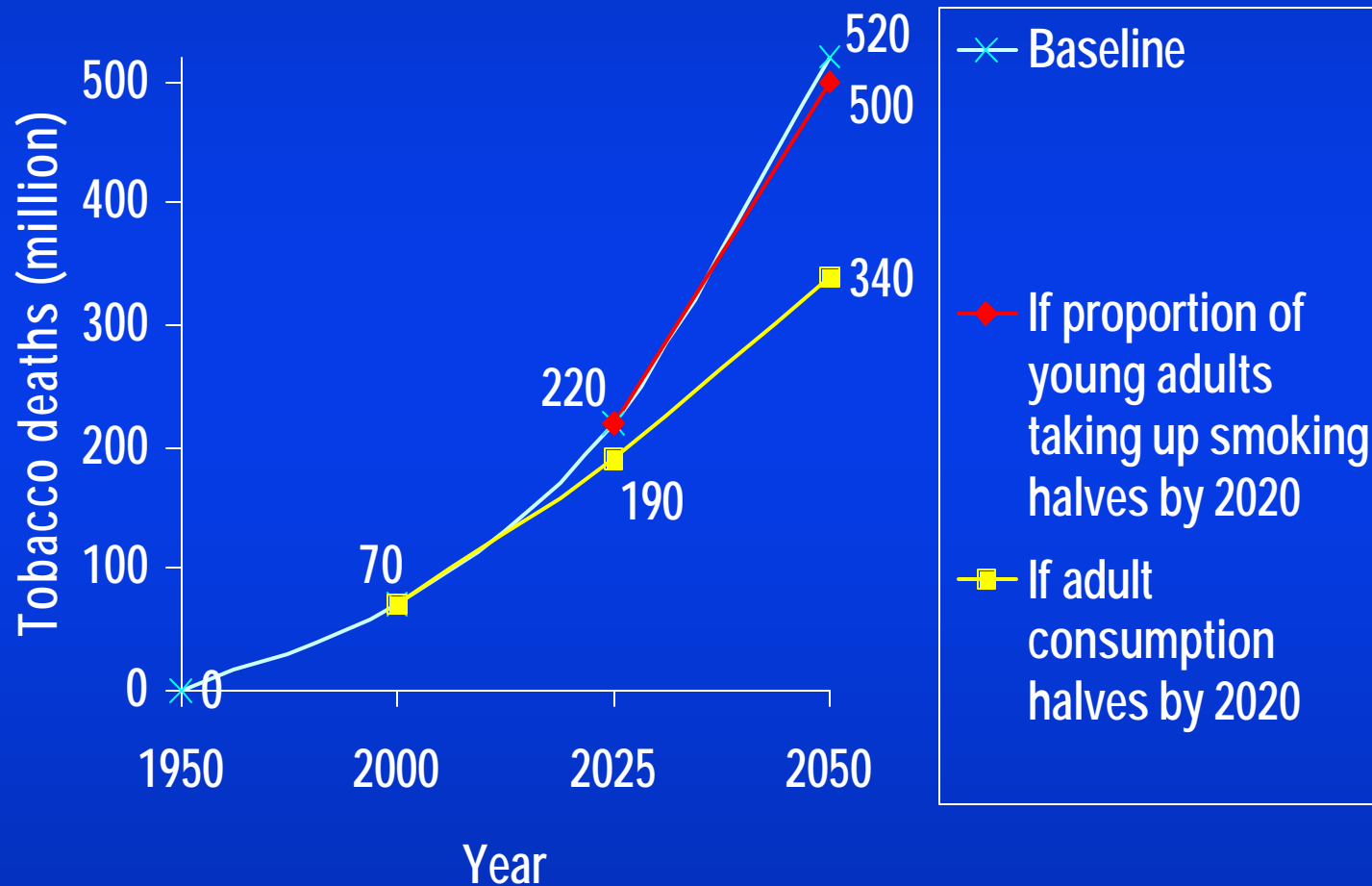
Source: Jha *et al.*, 2000

Adam Smith on tobacco tax

"Sugar, rum, and tobacco, are commodities which are no where necessaries of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation"

Source: An Inquiry into the Nature and Causes of The Wealth of Nations, Book V, Chapter III, pages 474-476, 1776;

Unless current smokers quit, smoking deaths will rise dramatically over the next 50 years



Source: Peto and Lopez, 2000

Which interventions are effective?

Measures to reduce demand

- Higher cigarette taxes
- Non-price measures: consumer information, research, cigarette advertising and promotion bans, warning labels and restrictions on public smoking
- Increased access to nicotine replacement (NRT) and other cessation therapies

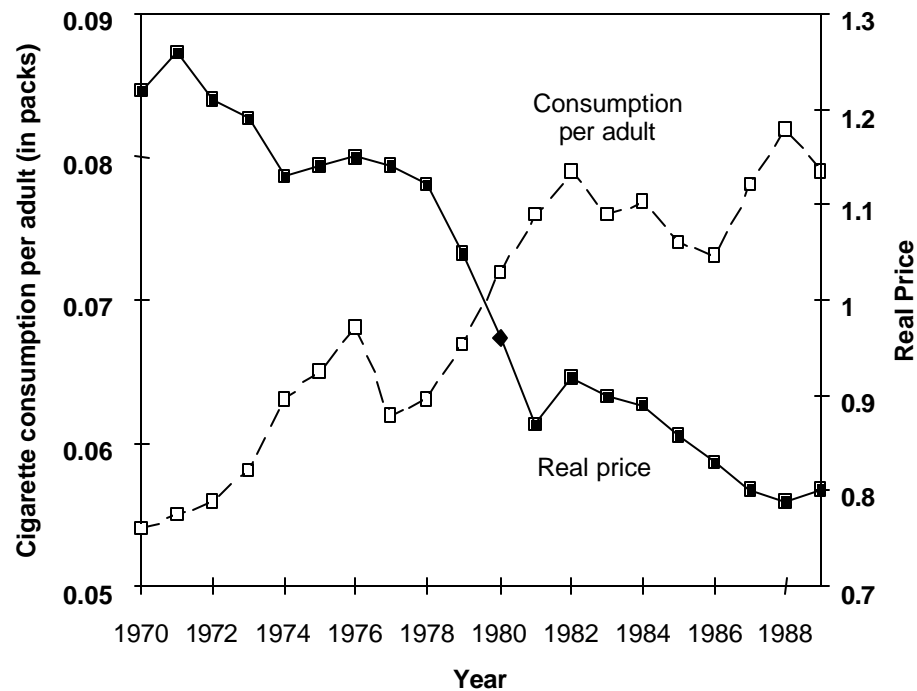
Taxation is the most effective measure

- Higher taxes induce quitting, reduce consumption and prevent starting
- A 10% price increase reduces demand by:
 - ◆ 4% in high-income countries
 - ◆ 8% in low or middle-income countries
- Young people and the poor are the most price responsive

Source: Chaloupka *et al.*, 2000

Cigarette price and consumption show opposite trends (1)

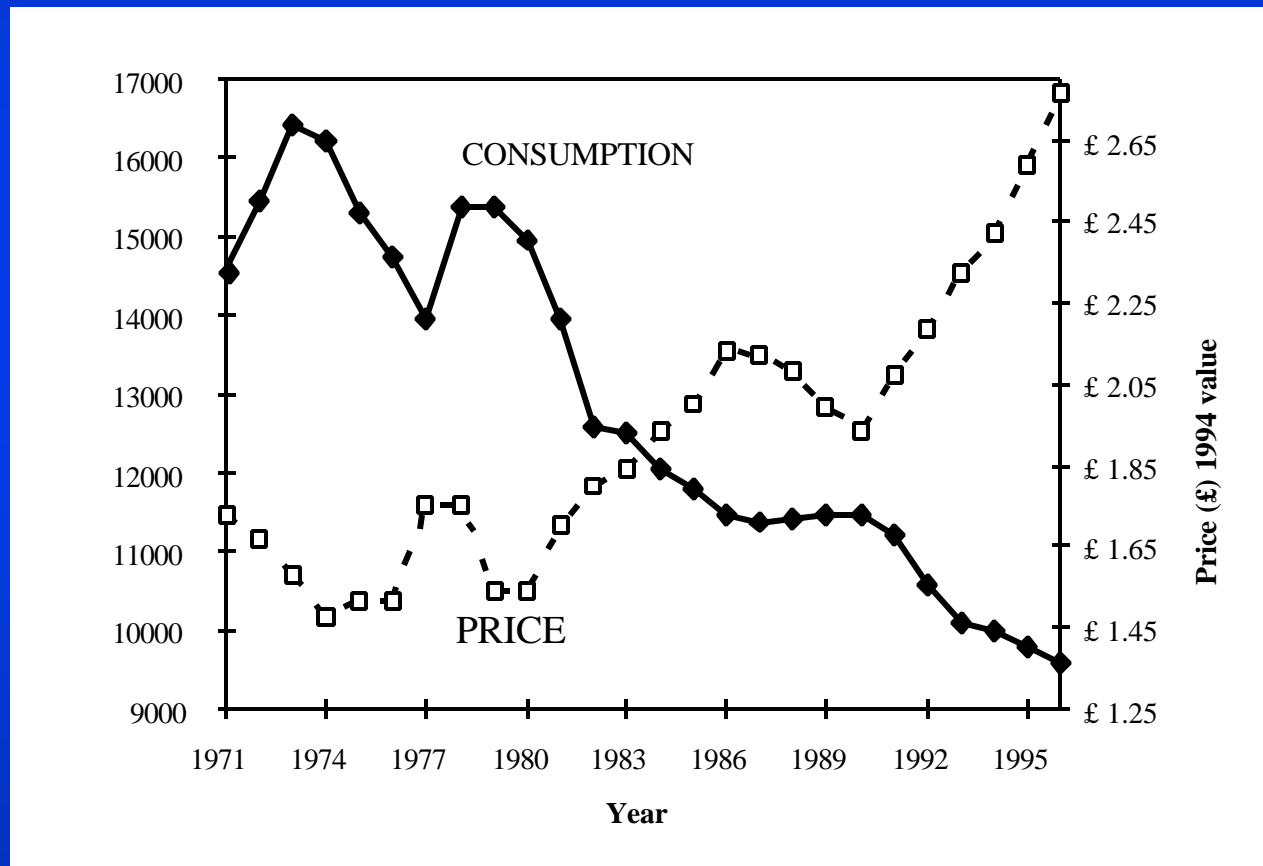
Real price of cigarettes and annual per adult cigarette consumption in South Africa 1970-1989



Source: Saloojee 1995

Cigarette price and consumption show opposite trends (2)

Real price of cigarettes and cigarette consumption in the UK, 1971-96



Source: Townsend 1998

What is the “right” level of tax?

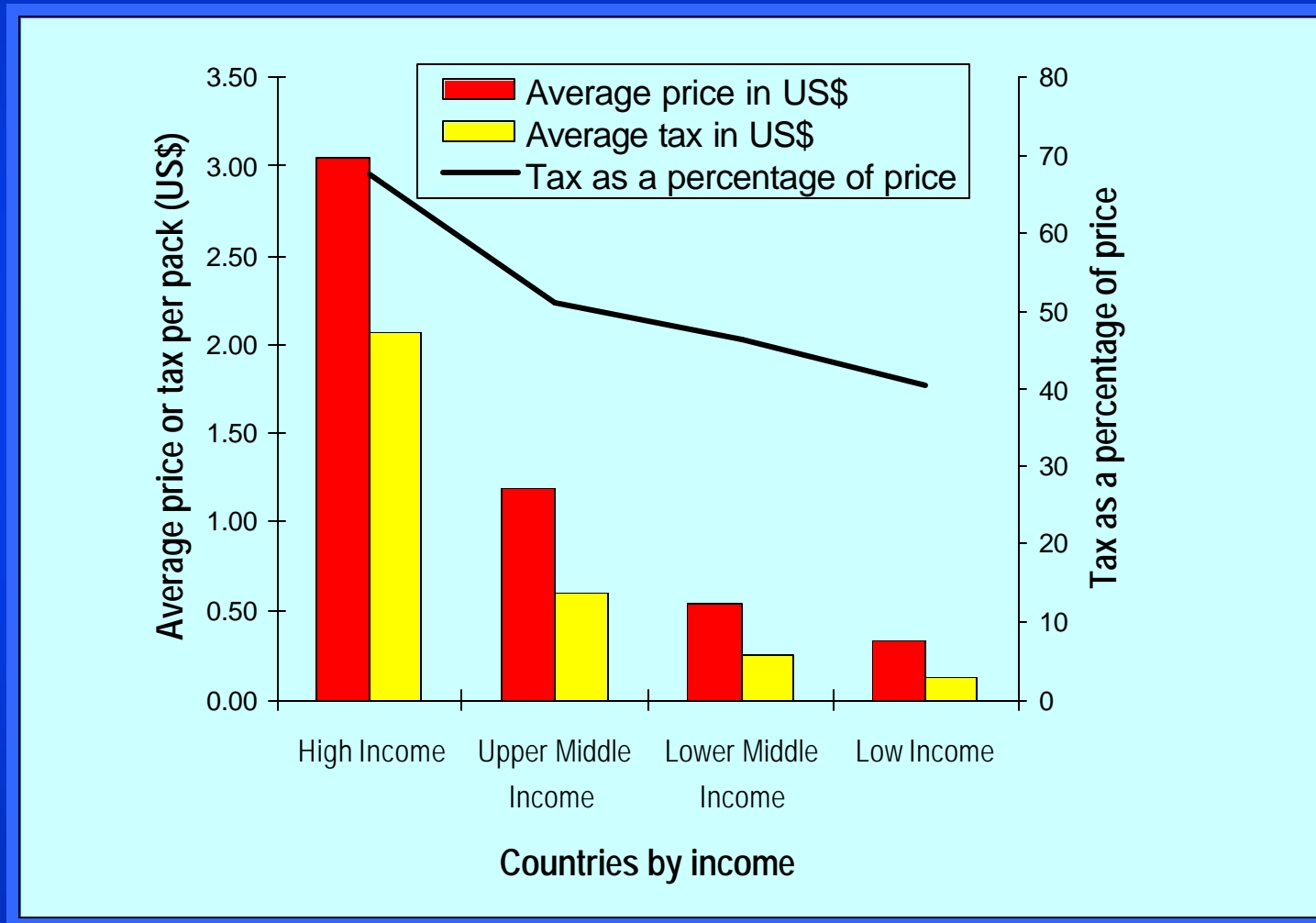
- Complex question

- ◆ Depends on various factors, such as degree to which society wishes to protect children, revenue considerations, etc.

- Useful yardstick: where comprehensive programs used, tax is at least 2/3 to 4/5 of retail price.

Source: Chaloupka *et al.*, 2000

There is still ample room, especially in lower-income countries, to raise cigarette taxes



Source: Chaloupka *et al.*, 2000

Non-price measures to reduce demand

- Increase consumer information:
dissemination of research findings, warning labels, counter-advertising
- Comprehensive ban on advertising and promotion
- Restrictions on smoking in public and work places
- Increase access to nicotine-replacement therapies (NRT)

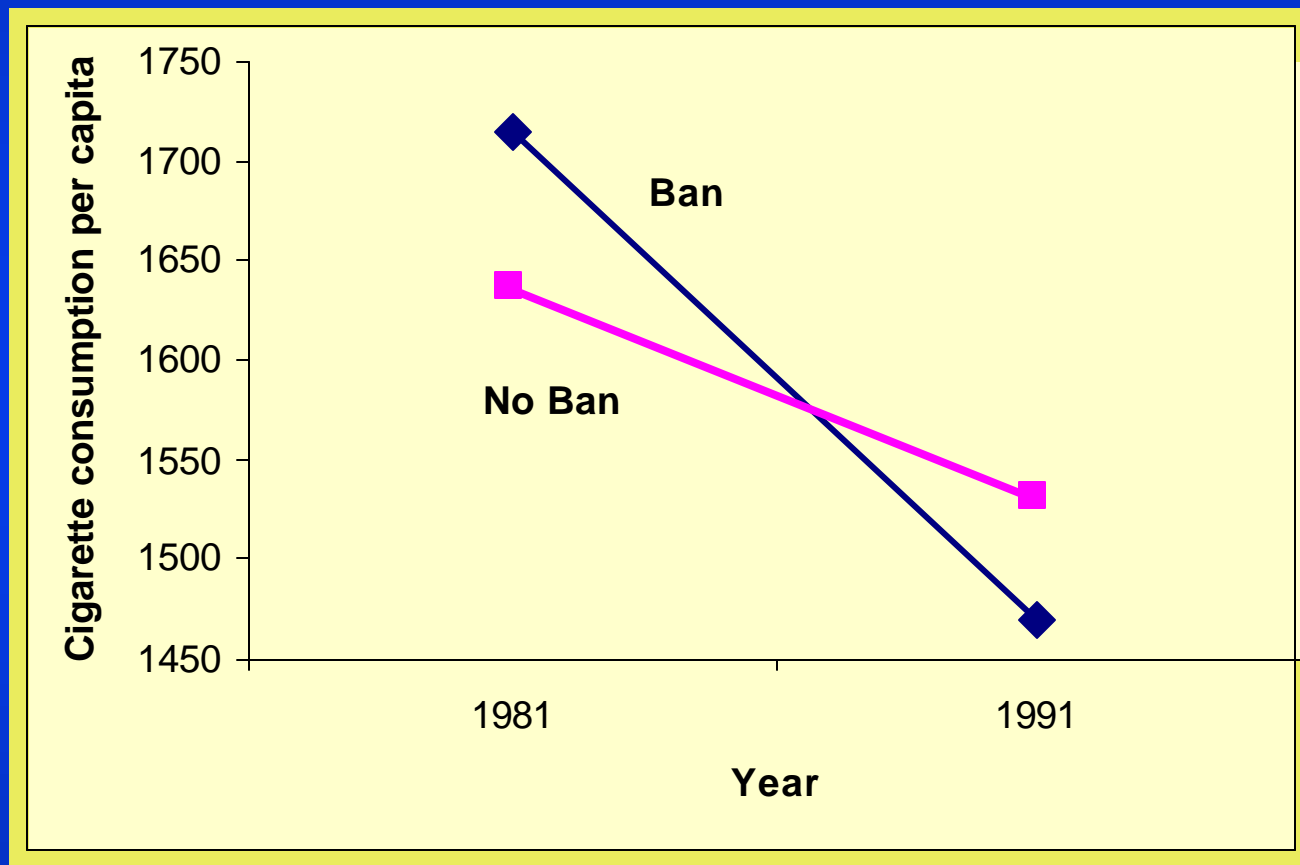
Health information reduces the demand for cigarettes

| Country | Time | Event | Immediate reduction in cigarette consumption |
|-------------|------|-----------------------------------------------------------|----------------------------------------------|
| The US | 1964 | Surgeon General Report | 1-2% |
| UK | 1962 | 1 st report of the Royal College of Physicians | 5% |
| Switzerland | 1966 | An anti-smoking campaign | 11% |
| Turkey | 1982 | Implementation of health warning labels | 8% |

Source: Kenkel and Chen, 2000

Comprehensive advertising bans reduce cigarette consumption

Consumption trends in countries with such bans vs. those with no bans
(n=102 countries)



Source: Saffer, 2000

Effect of advertising bans and counter-advertising

- A comprehensive set of tobacco advertising bans can reduce consumption by 6.3%
- Counter-advertising messages (set at 15% of the total number of advertising messages) can reduce smoking by about 2% a year

Source: Saffer, 2000

Clean indoor-air laws and youth access restrictions

■ Clean indoor-air laws:

- ◆ can reduce cigarette consumption
- ◆ can be self-enforcing
- ◆ work best with social consensus against smoking

■ Youth access restrictions:

- ◆ mixed evidence of effectiveness
- ◆ require aggressive reinforcement

NRT and cessation therapies

- NRTs double the effectiveness of cessation efforts and reduce individuals' withdrawal costs
- Governments may widen access to NRT and other cessation therapies by:
 - ◆ Reducing regulation
 - ◆ Conducting more studies on cost-effectiveness (especially in low/middle income countries)
 - ◆ Considering NRT subsidies for poorest smokers

Source: Novotny *et al.*, 2000

Potential impact of a price increase of 10% and a package of non-price measures

| Region | Change in number of smokers (millions) | | Change in number of deaths (millions) | |
|-------------------|----------------------------------------|--------------------|---------------------------------------|--------------------|
| | Price increases | Non-price measures | Price increases | Non-price measures |
| Low/Middle Income | -38 | -19 | -9 | -4 |
| High Income | -4 | -4 | -1 | -1 |
| World | -42 | -23 | -10 | -5 |

Source: Ranson *et al.*, 2000

Which interventions are ineffective at reducing consumption?

Most measures to reduce supply

- Prohibition
- Youth access restrictions
- Crop substitution
- Trade restrictions
- *Control of smuggling is the only exception and it is the key supply-side measure*

Source: Jacobs *et al.*, 2000; Woolery *et al.*, 2000; Taylor *et al.*, 2000

Trade and tobacco consumption

- Trade liberalisation increases cigarette consumption, especially in low and middle-income countries
- Trade restrictions are unrealistic
- Governments should apply other effective control measures without discrimination against domestic or imported cigarettes.

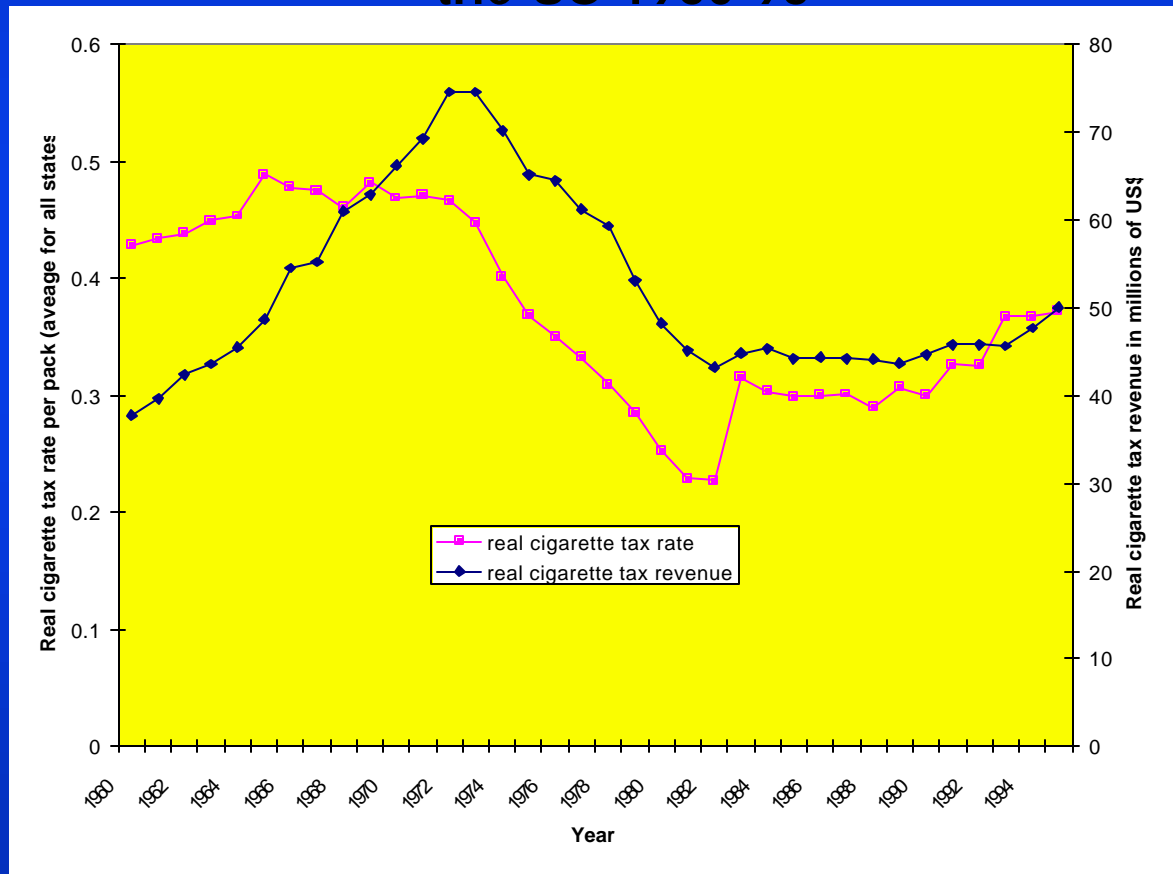
Source: Taylor *et al.*, 2000

What are the costs of tobacco control?

- **Revenue loss**: likely to have revenue gains
 - ◆ a 10% tax increase would raise revenue by 7%
- **Job loss**: temporary, minimal, and gradual
- **Possible smuggling**: crack down on criminal activity, not lower taxes
- **Cost to individuals, especially the poor**: partially offset by lower consumption

Cigarette tax increases result in higher tax revenues (1)

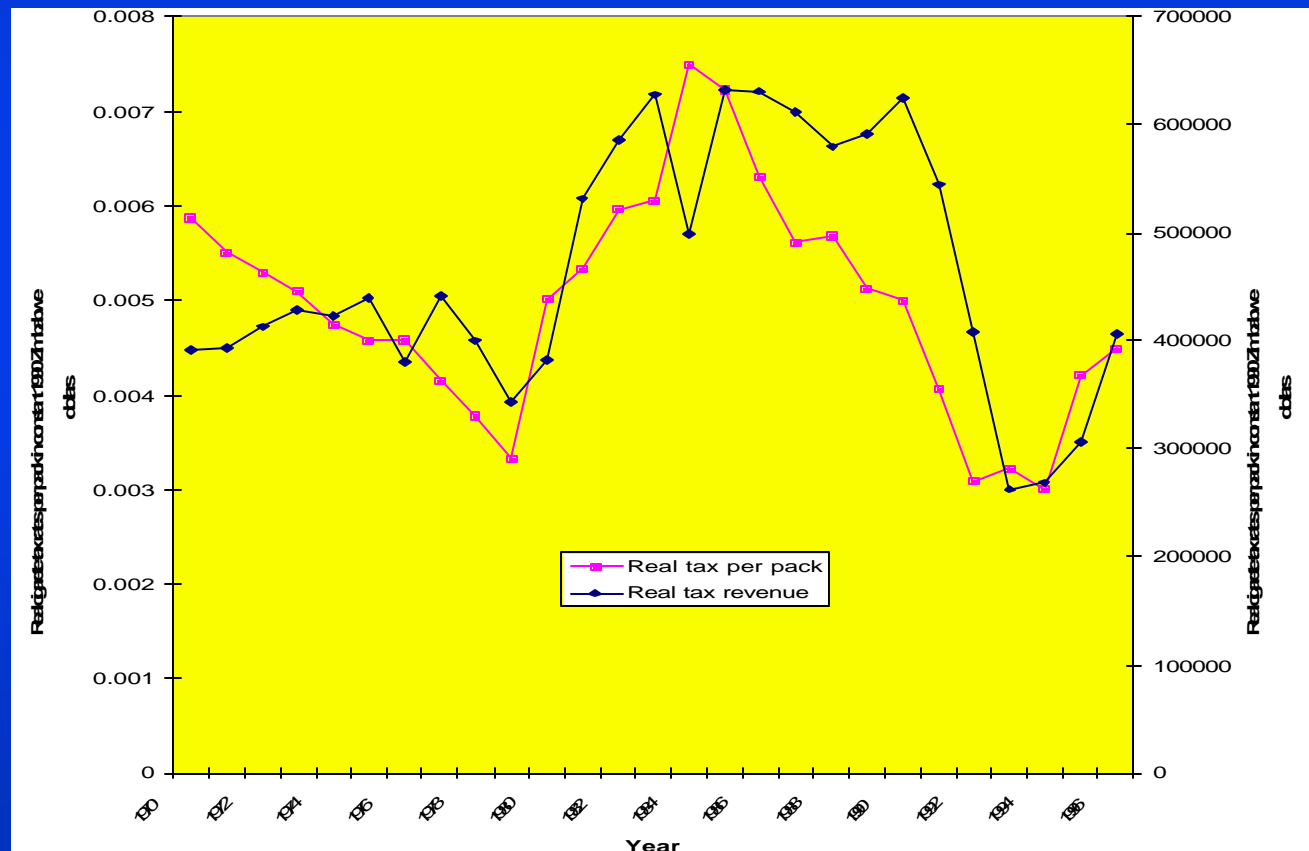
Real cigarette tax rate and real cigarette tax revenue in the US 1960-95



Source: Sunley *et al.*, 2000

Cigarette tax increases result in higher tax revenues (2)

Real cigarette tax rate and real cigarette tax revenue in South Africa 1960-97



Source: Sunley *et al.*, 2000

Studies on the employment effects of dramatically reduced or eliminated tobacco consumption

| <i>Type of country</i> | <i>Name and year</i> | <i>Net change as % of economy in base year given</i> |
|----------------------------|----------------------|------------------------------------------------------|
| Net Exporters | US (1993) | 0% |
| | UK (1990) | +0.5% |
| | Zimbabwe (1980) | -12.4% |
| Balanced Tobacco Economies | South Africa (1995) | +0.4% |
| | Scotland (1989) | +0.3% |
| Net Importers | Bangladesh (1994) | +18.7% |

Source: Buck and others, 1995; Irvine and Sims, 1997; McNicoll and Boyle 1992, van der Merwe and others, background paper; Warner and others 1996

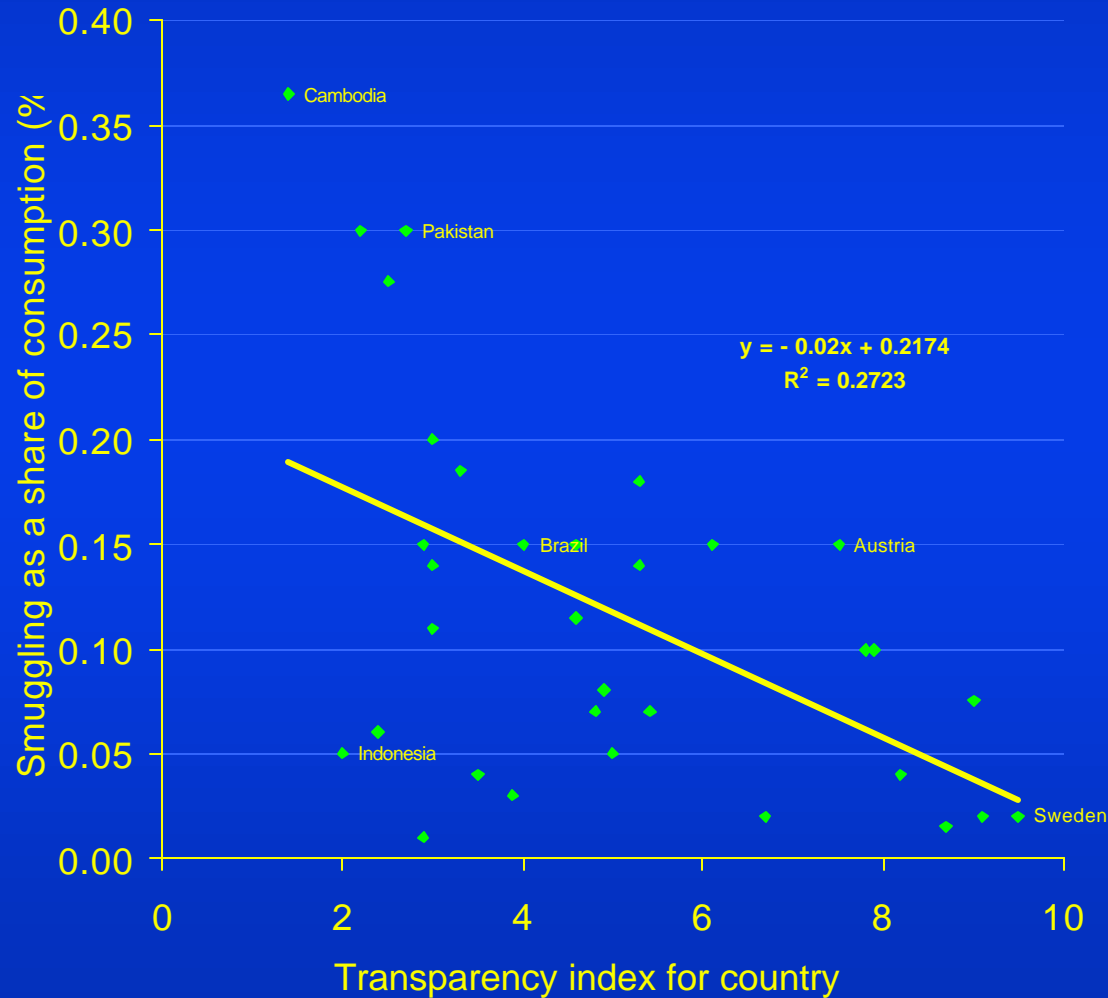
Smuggling of Cigarettes

- Industry has economic incentive to smuggle
 - ◆ Increase market share and decrease tax rates
- Best estimate: 6 to 8.5% of total consumption
- Non-price variables important
 - ◆ Perceived level of corruption more important than cigarette prices
- Tax increase will lead to revenue increase, even in the event of increased smuggling

Source: Merriman *et al.* 2000; Joosens, 2000; BAT, 1998

Tobacco smuggling tends to rise in line with the degree of corruption

Smuggling as a function of transparency index



Source: Merriman *et al.*, 2000

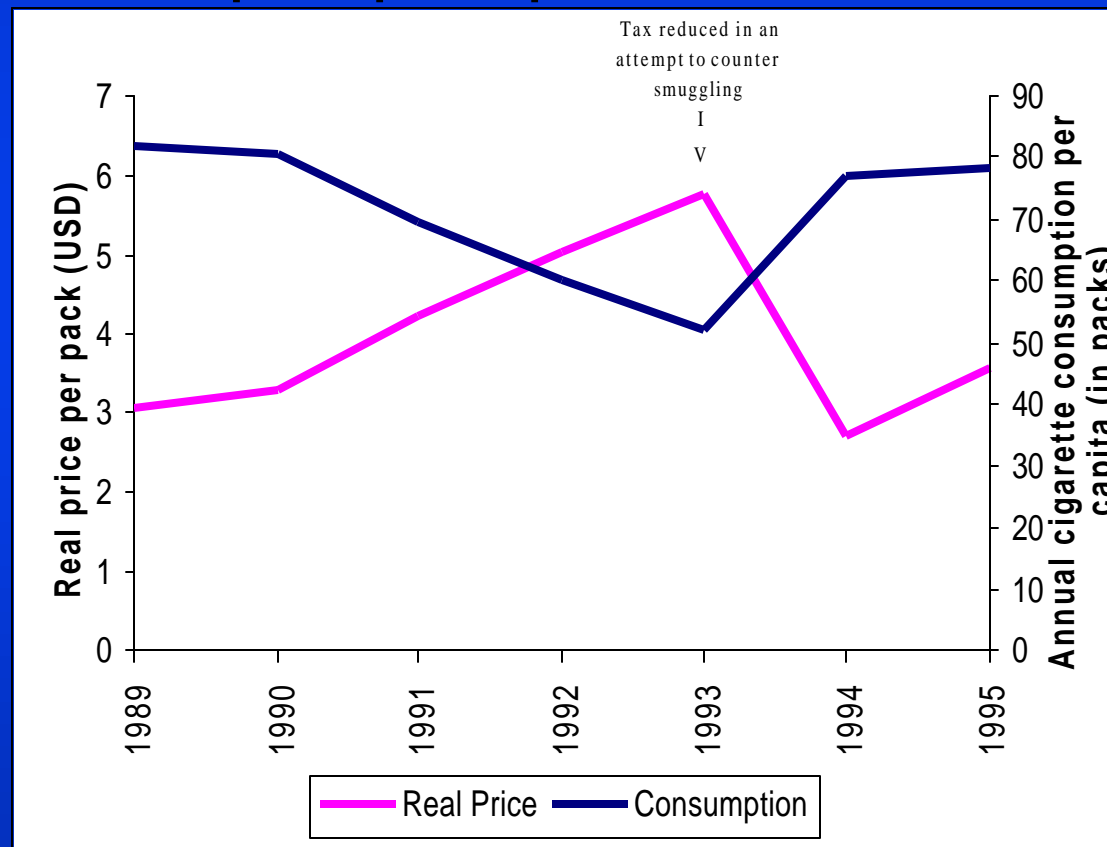
Control of Smuggling

- Countries need not make a choice between higher cigarette tax revenues and lower cigarette consumption
 - ◆ Higher tax rates can achieve both
- Effective control measures of smuggling exist
 - ◆ Focus on large container smuggling
 - ◆ Prominent local language warnings and tax stamps
 - ◆ Increase penalties
 - ◆ Licensing and tracking of containers
 - ◆ Increase export duties or bonds
- Multilateral tax increases help combat smuggling

Source: Merriman *et al.* 2000; Joosens, 2000; BAT, 1998

Lower tax rates in Canada in response to smuggling

Real price of cigarettes and annual cigarette consumption per capita, Canada, 1989-1995



Source: World Bank, 1999

Smuggling and Tax Revenue (1)

SOUTH AFRICA, 1990s

- Increased excise tax from 38 to 50% of retail price
 - ◆ Smuggling rose from 0 to 6%
 - ◆ Sales fell 20%
 - ◆ Revenue went up 2 fold

CANADA, 1993-94

- Lowered tax in response to organized smuggling
 - ◆ Retail price fell by half
 - ◆ Total consumption rose 48%, more so in young
 - ◆ Average revenue per capita fell by 35%

Source: Abedian, 1998; Swenar, 1998

Smuggling and Tax Revenue (2)

Percent of revenue increases from a 10% tax increase, taking smuggling into account

| <u>Country</u> | <u>Unilateral</u> | <u>Multilateral</u> |
|----------------|-------------------|---------------------|
| Bulgaria | +9.7 | +9.8 |
| Turkey | +9.6 | +9.6 |
| France | +5.8 | +7.0 |
| UK | +4.6 | +5.9 |
| 17 Countries | +6.9 | +8.2 |

Source: * Econometric estimates from Merriman *et al.*, 2000

How cost-effective are tobacco control measures?

US dollars per healthy year life gained

| <i>Region</i> | <i>Price increases of 10%</i> | <i>Non-price measures with effectiveness of 5%</i> | <i>NRT (publicly provided) with 25% coverage</i> |
|---------------------|-------------------------------|----------------------------------------------------|--------------------------------------------------|
| Low / middle income | 4 to 34 | 68 to 272 | 276 to 297 |
| High Income | 165 to 1,370 | 1,347 to 5,388 | 746 to 1,160 |

Note: 3% discount rate, costs for non-price measures and all benefits projected over 30 years

Source: *Ranson et al., 2000*

Summary

- Tobacco deaths worldwide are large and growing, and have higher burdens among the poor
- Specific market failures support government intervention
- Demand measures, chiefly tax increases, information, and regulation are most effective to reduce consumption
- Control of smuggling is the major supply-side intervention
- Tobacco control is cost-effective

Key recommendations

- **Governments:** adopt multi-pronged strategy, tailored to each country
 - ◆ cigarette tax increases: 2/3 to 4/5 of retail price
 - ◆ consumer information, research, advertising and promotion bans, warning labels and restrictions on public smoking
 - ◆ widen access to NRT and other cessation therapies
- **International agencies:** review policies, sponsor research, address cross-border issues and support the FCTC