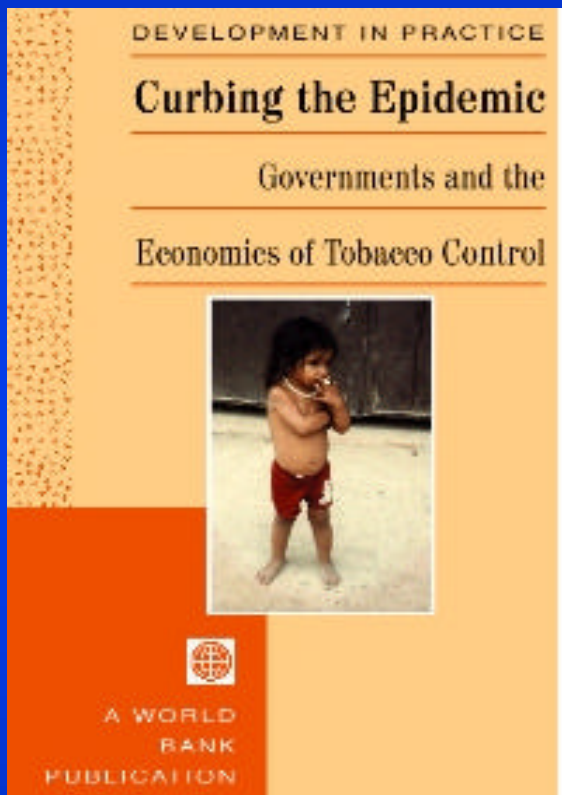


Tobacco Taxation and Public Health

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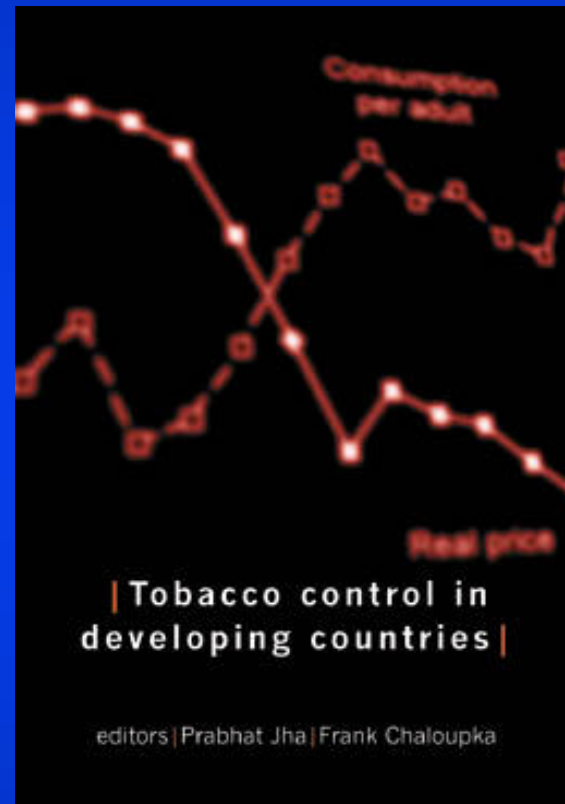
Curbing the Epidemic

Governments and the Economics of Tobacco Control



The World Bank

Tobacco Control in Developing Countries



World Health Organization

Historically, tobacco taxes used to generate revenues

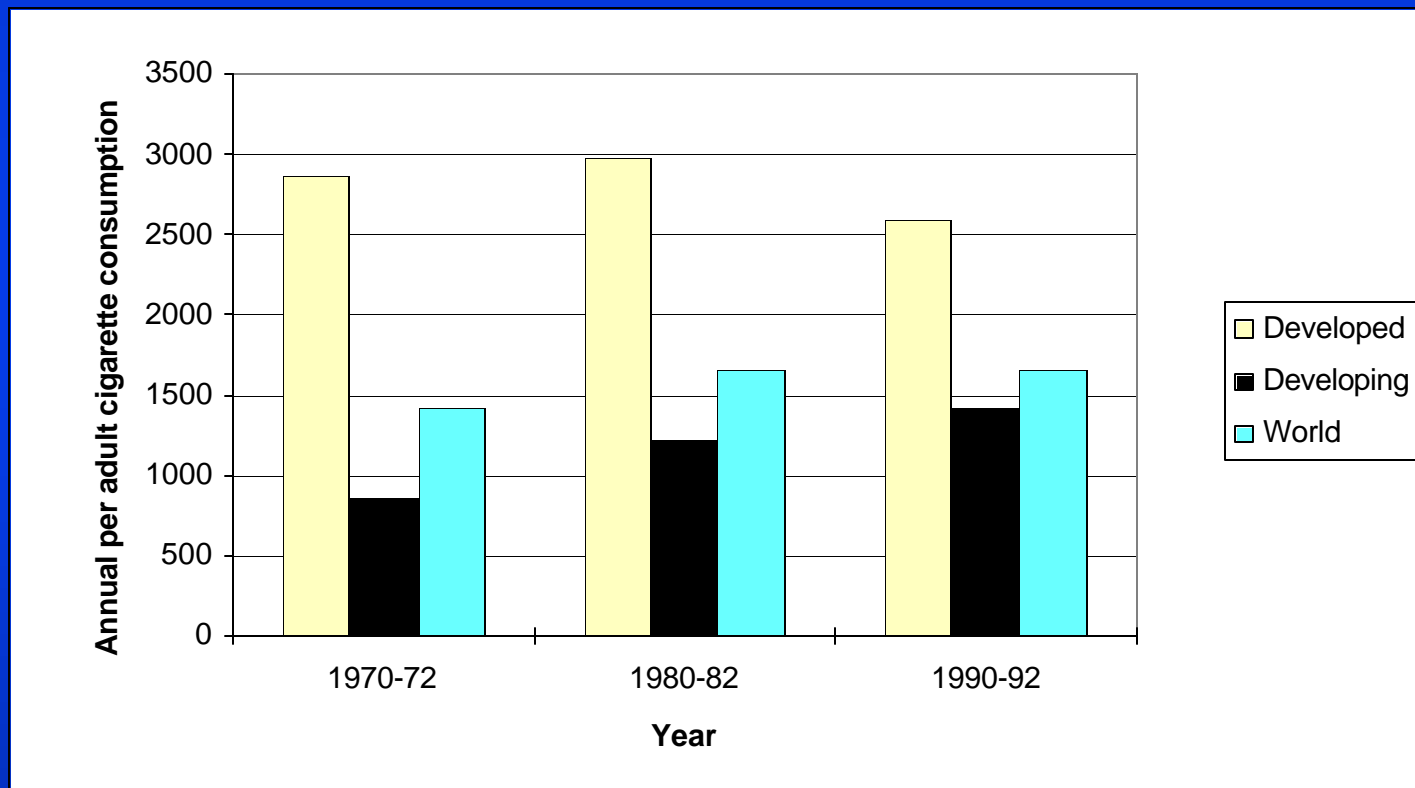
Adam Smith on tobacco tax: "*Sugar, rum, and tobacco, are commodities which are no where necessaries of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation*"

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

More recently, tobacco taxes used to improve health

- Reductions in tobacco consumption lead to reductions in morbidity and mortality caused by tobacco use
- Improved economic efficiency from “user fees” that cover the social costs of tobacco use and its consequences

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)

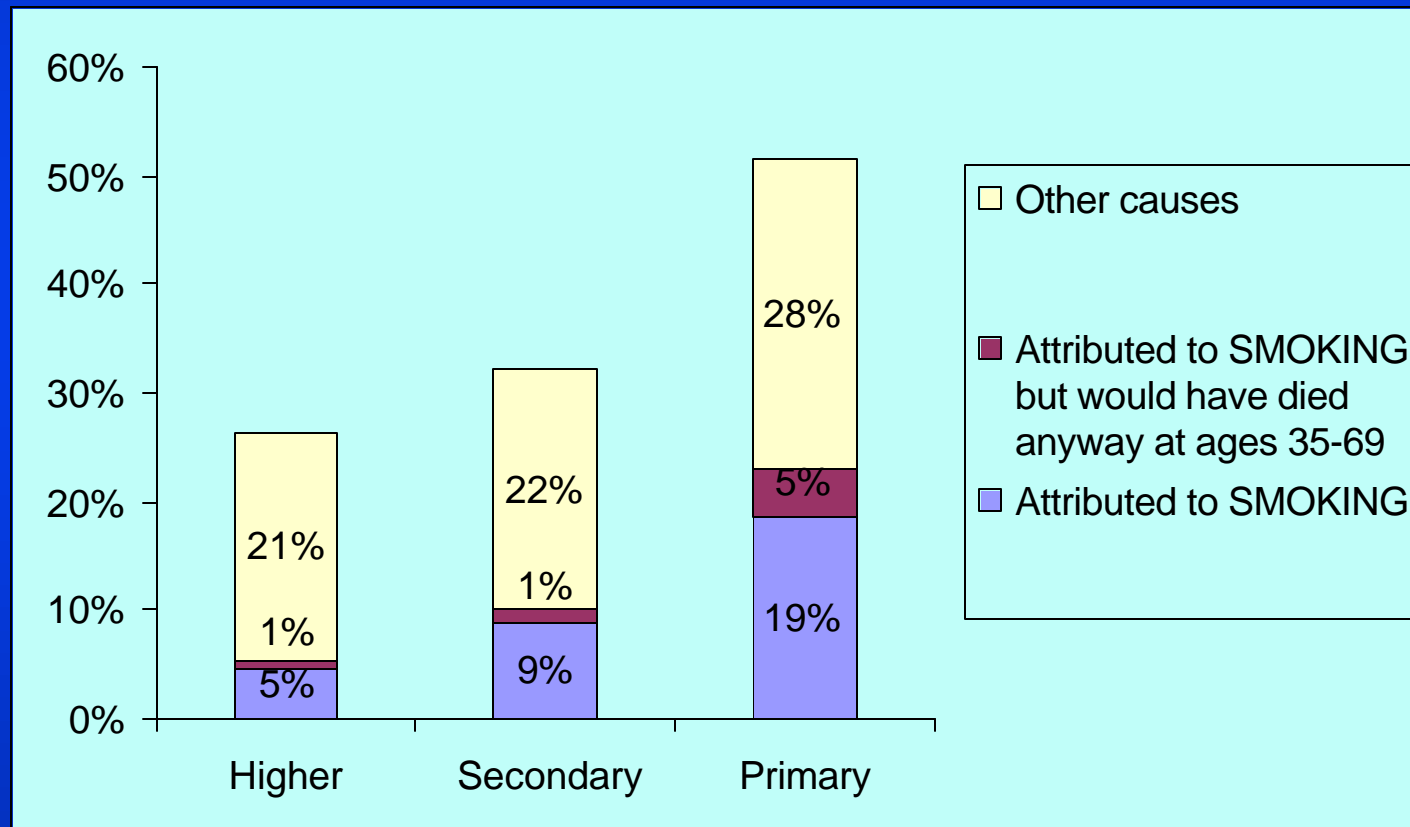
<u>Time</u>	<u>Millions of deaths</u>
1901-2000	100 (mostly in developed countries)
2001-2100	1,000 (mostly in developing countries)

- ◆ 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

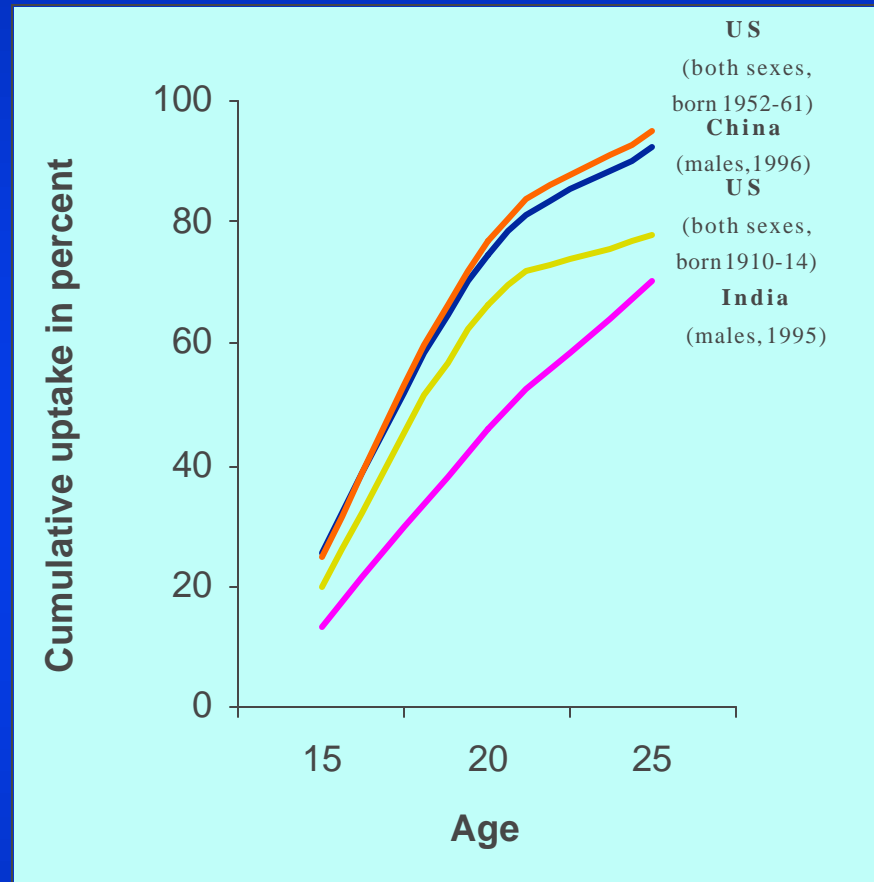
Smoking accounts for much of the mortality gap between rich and poor

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



Source: Bobak *et al.*, 2000

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

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

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

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

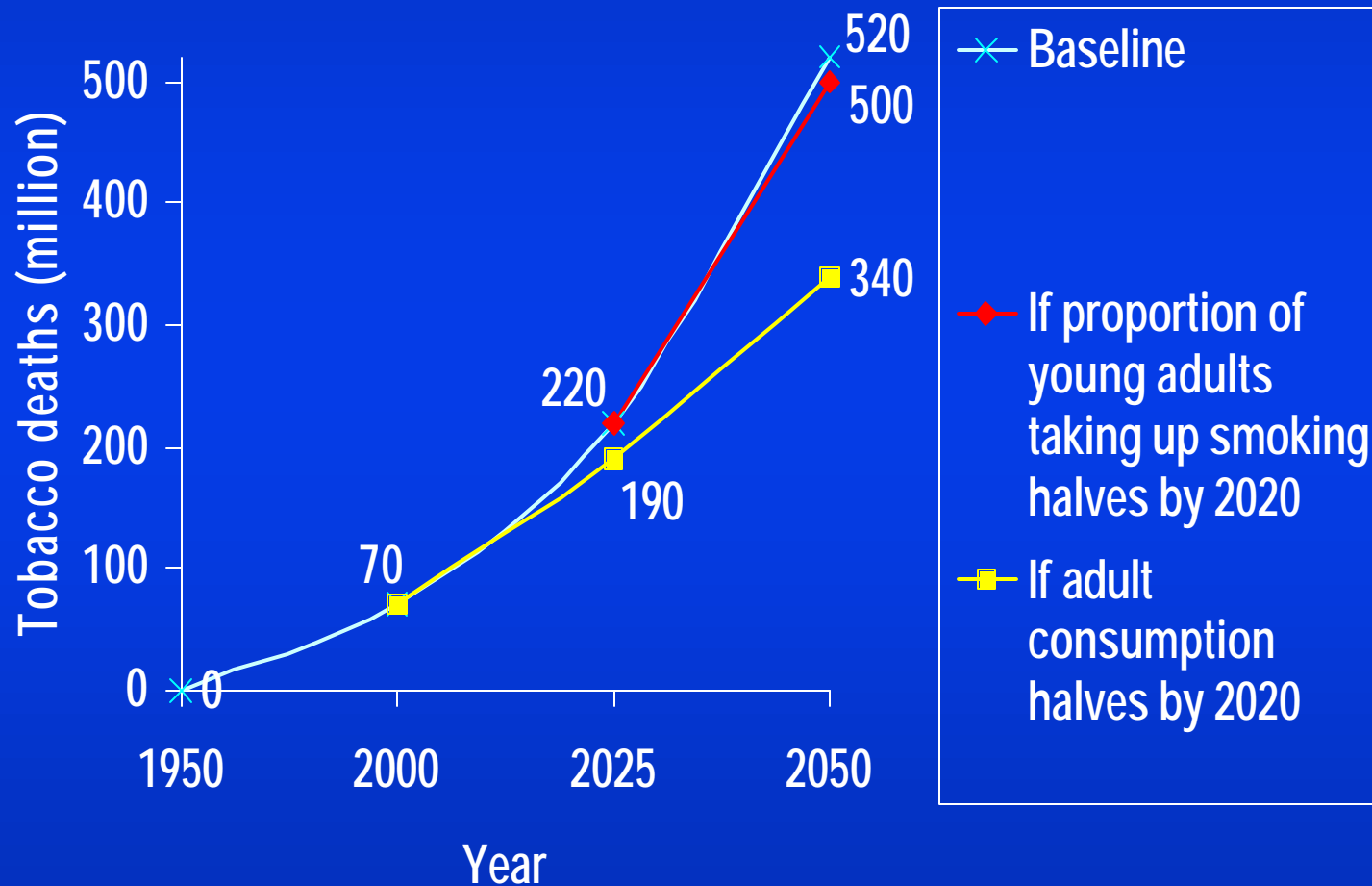
Source: Lightwood *et al.*, 2000

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

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, prevent relapse, reduce consumption and prevent starting
- A 10% price increase reduces demand by:
 - ◆ 4% in high-income countries
 - ◆ 8% in low or middle-income countries

Source: Chaloupka *et al.*, 2000

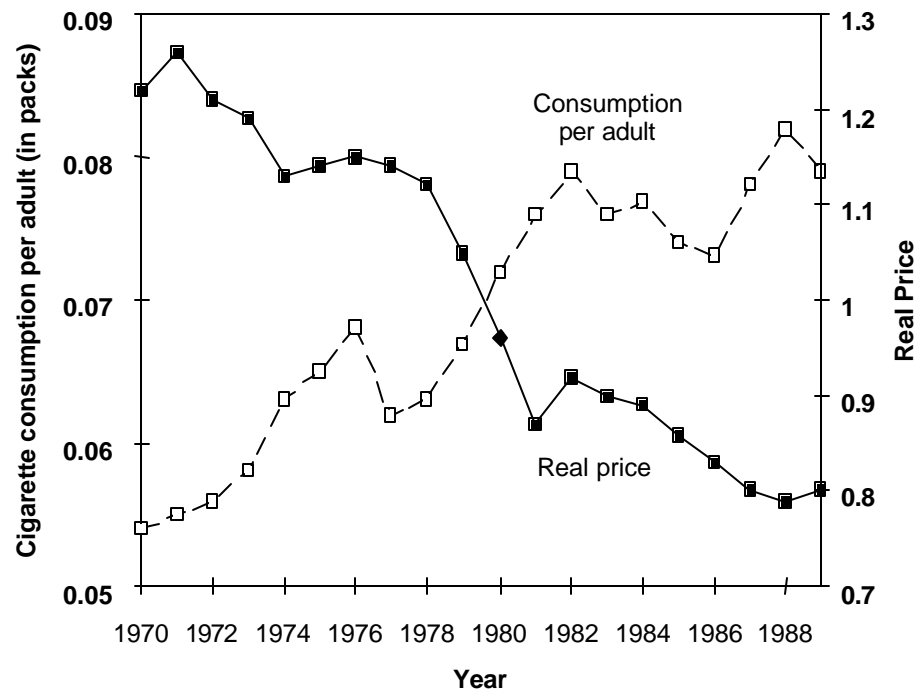
Taxation is the most effective measure

- Because of the addictive nature of smoking, long run impact of sustained price increase is about double the short run impact
- Hard to reach populations, including young people, less educated persons and the poor are the most price responsive

Source: Chaloupka *et al.*, 2000

Cigarette price and consumption show opposite trends (1)

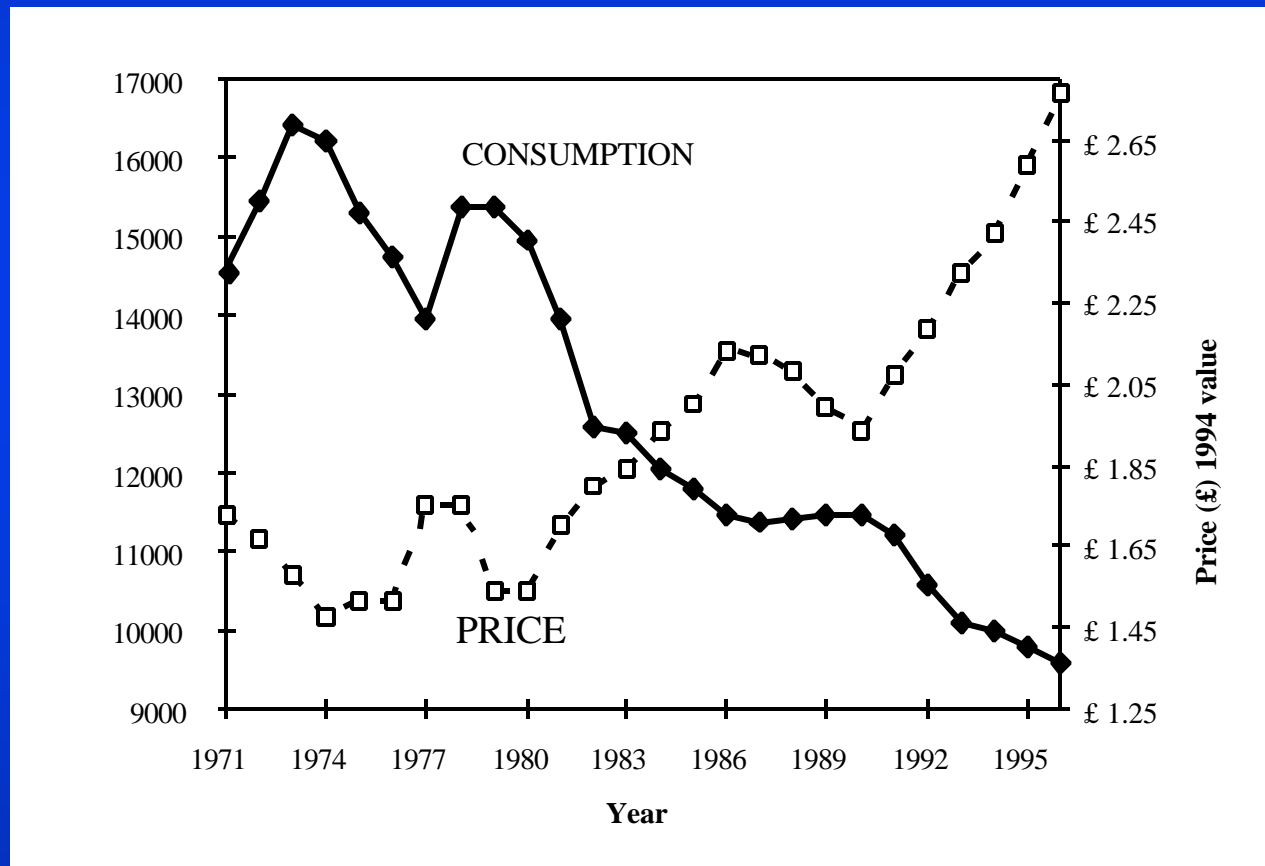
Real price of cigarettes and annual per adult cigarette consumption in South Africa 1970-1989



Source: Saloojee 1995

Cigarette price and consumption show opposite trends (2)

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



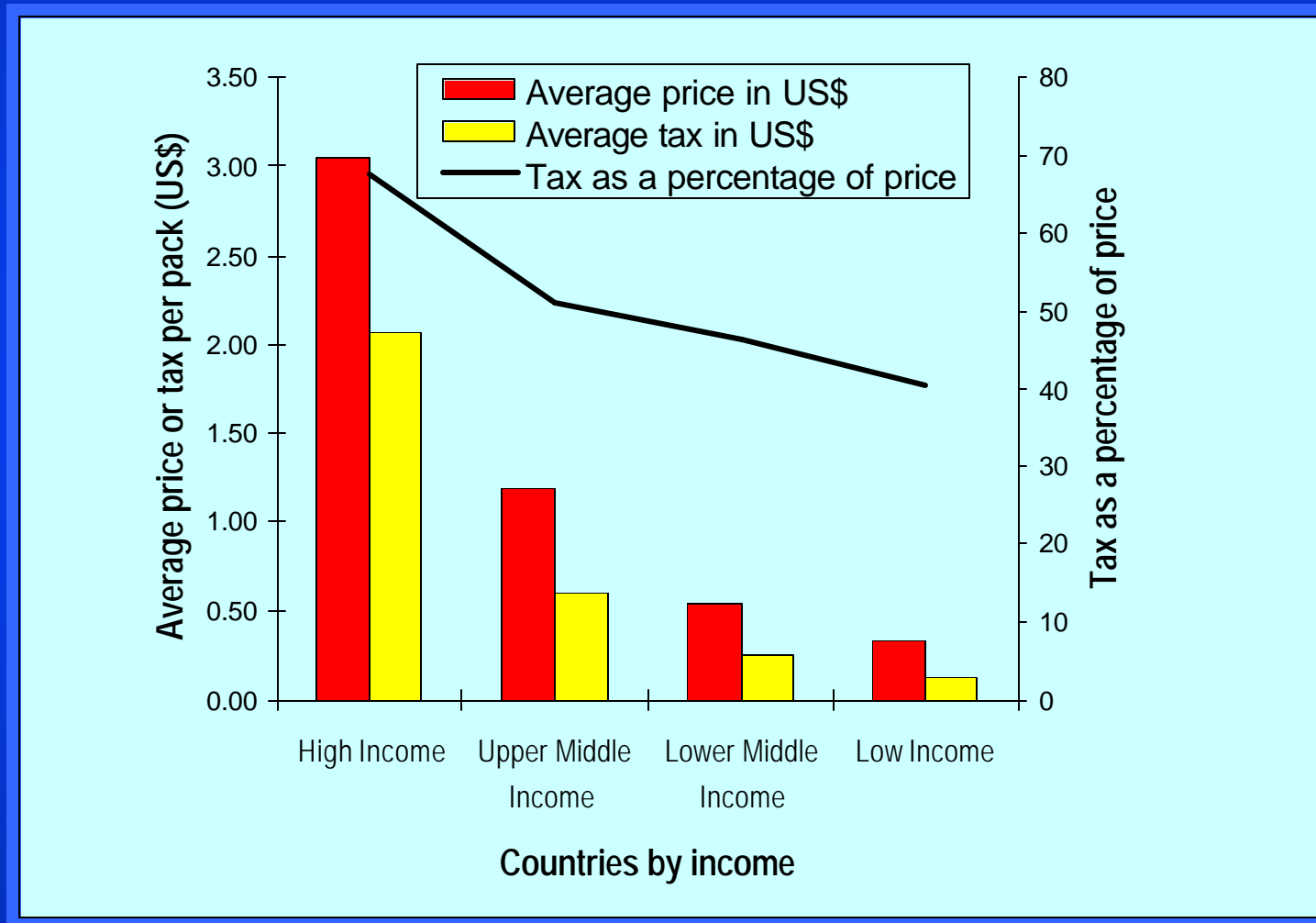
Source: Townsend 1998

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

Earmarked/Dedicated Tobacco Taxes Generate Additional Public Health Benefits (1)

- Used for countermarketing and other tobacco control efforts (California, Massachusetts, Chongqing and several others)
 - ◆ These efforts lead to further reductions in tobacco use and its consequences
- Replace tobacco industry funding of sporting and artistic events (the Vic-Health model; New Zealand, Australian states, others)

Earmarked/Dedicated Tobacco Taxes Generate Additional Public Health Benefits (2)

- Used to fund health care for under-insured populations, cancer control research, and other public health efforts (California, Canada, Ecuador, Finland, Guam, Malaysia, Peru, Portugal, the US, and many others)
- Used to help tobacco farmers and manufacturing employees move into other crops and industries (relatively uncommon)

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

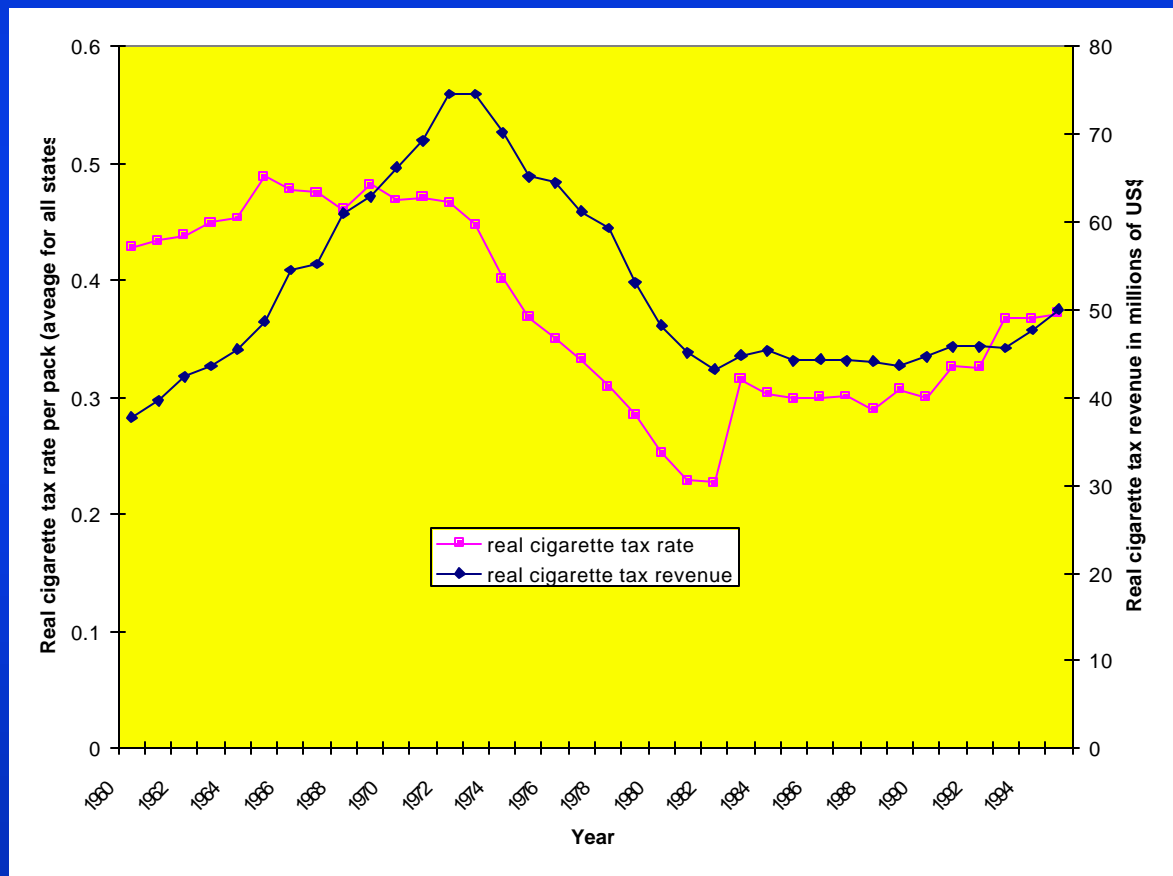
Source: Ranson *et al.*, 2000

What are the costs of tobacco taxation?

- **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)

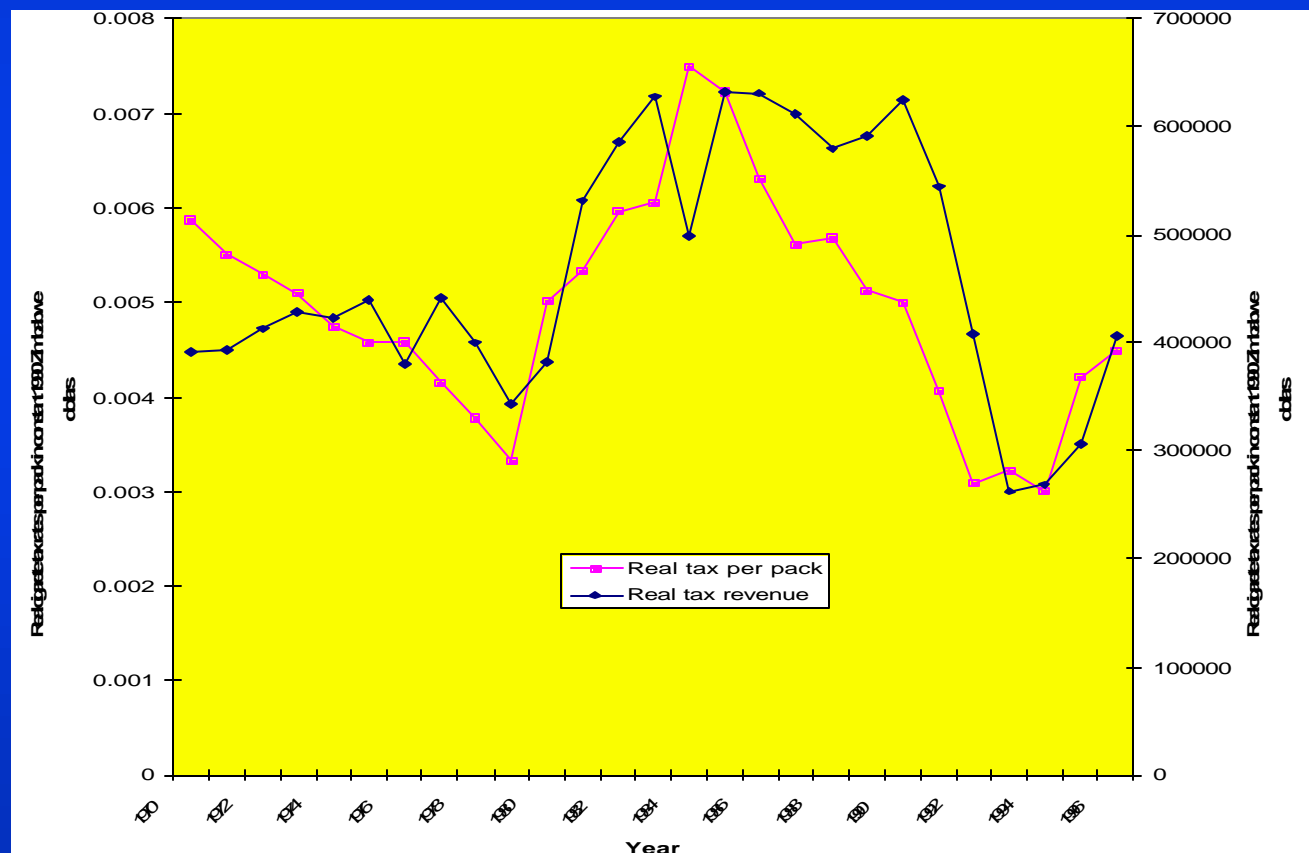
Real cigarette tax rate and real cigarette tax revenue in the US 1960-95



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

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

How cost-effective is tobacco taxation?

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
- Tax increases are most effective to reduce consumption
- Other demand reduction strategies are also effective
- Control of smuggling is the major supply-side intervention
- Tobacco taxation and other tobacco control efforts are cost-effective