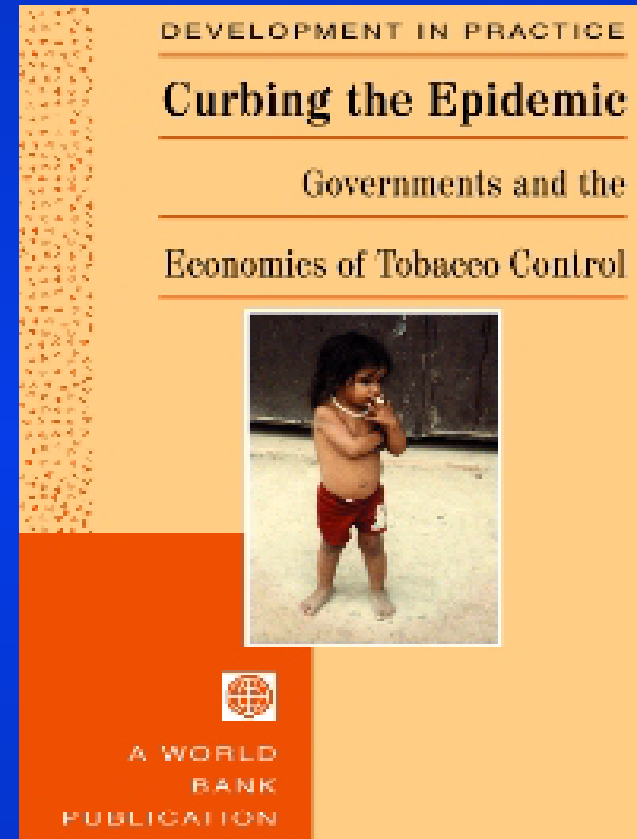
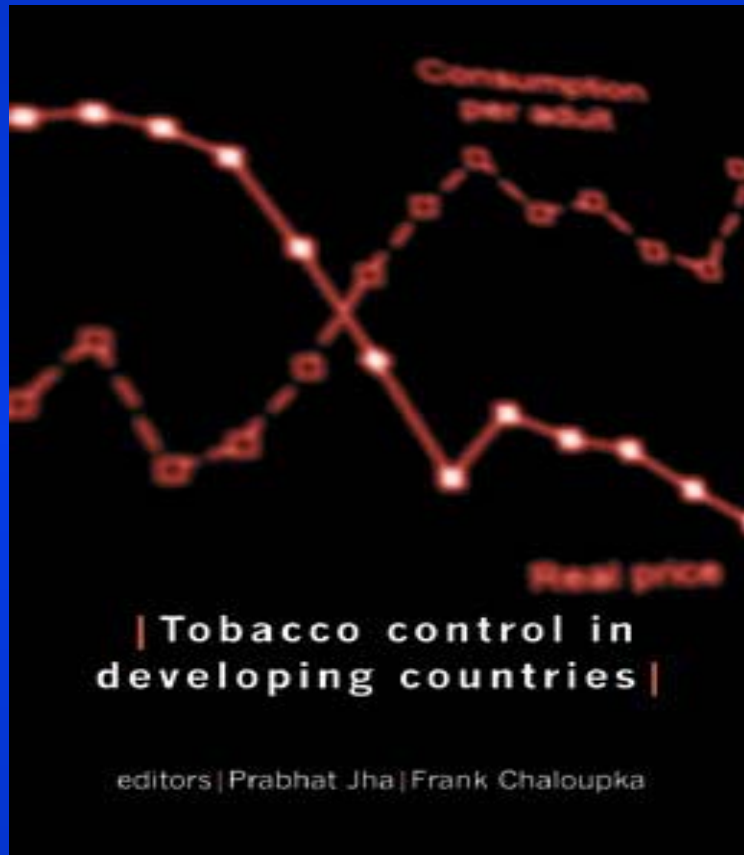


The Economics of Tobacco Control: Tobacco Taxation



**P Jha and FJ Chaloupka on behalf of the
report team and the
International Tobacco Evidence Network
papers at www.tobaccoevidence.net**



The World Bank



Why this work?

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”

Why this work?

But industry clearly understands the impact of tobacco taxation

"With regard to taxation, it is clear that in the US, and in most countries in which we operate, tax is becoming a major threat to our existence."

"Of all the concerns, there is one - taxation - that alarms us the most. While marketing restrictions and public and passive smoking (restrictions) do depress volume, in our experience taxation depresses it much more severely. Our concern for taxation is, therefore, central to our thinking...."

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

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.*

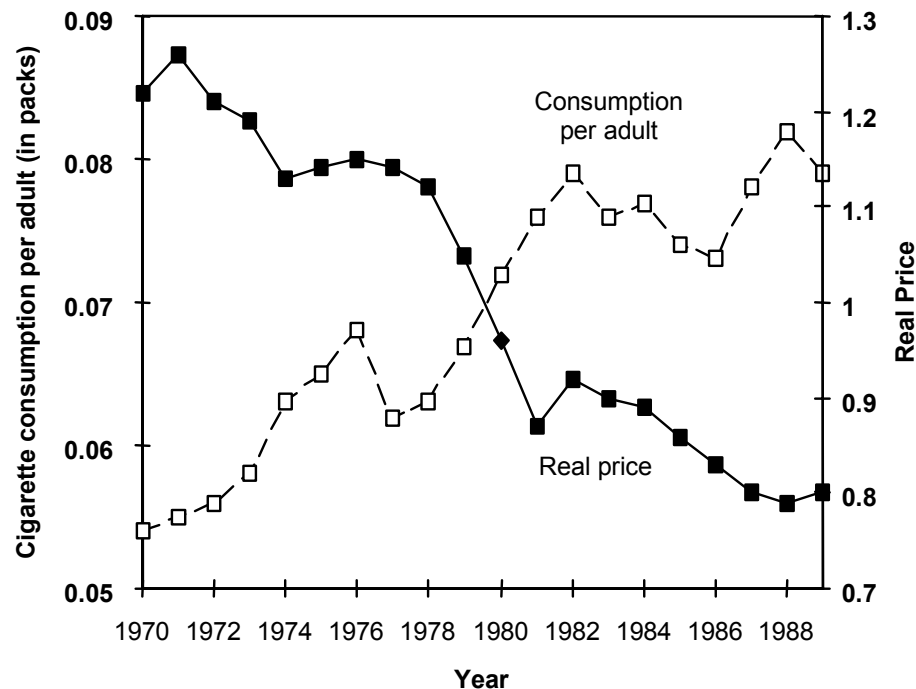
Taxation is the most effective measure

- 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
 - ◆ Long run effects of sustained increase larger due to addiction

Source: Chaloupka *et al.*, 2000

Cigarette price and consumption show opposite trends (1)

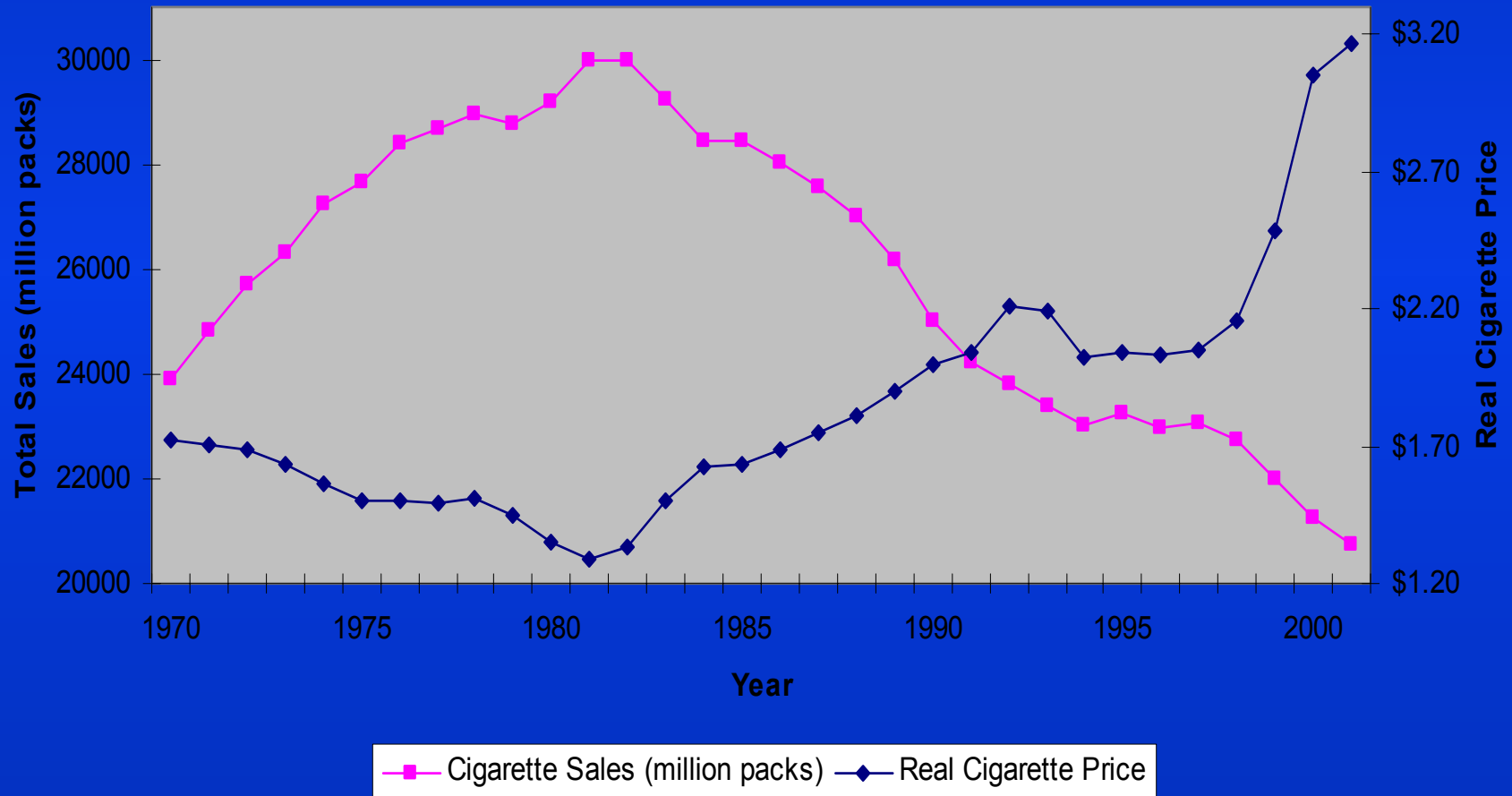
Real price of cigarettes and annual per adult cigarette consumption in South Africa 1970-1989



Source: Saloojee 1995

Cigarette price and consumption show opposite trends (2)

Total Cigarette Sales and Cigarette Prices, 1970-2001



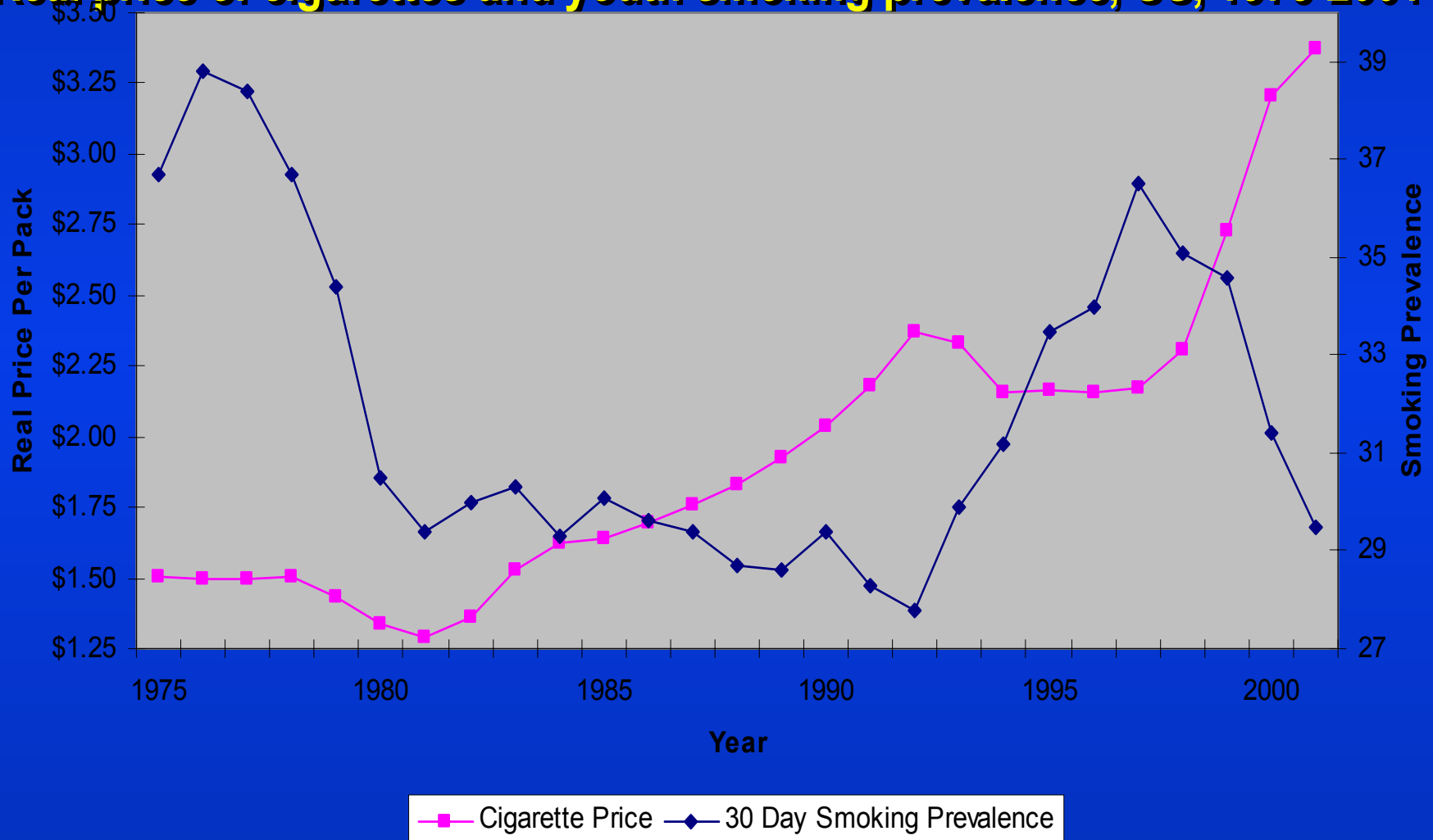
Source: ImpactTeen, 2002

Youth and the Poor Most Responsive to Tax Increases

- Effects on youth up to three times as large as effects on adults
 - ◆ low incomes, less addicted, greater effect of peer influences, importance of current costs
- Large reductions in lowest income populations compared to small reductions in highest income populations
 - ◆ Consistent with economic theory
 - ◆ *Implies tax increases can be progressive*

Cigarette price and youth smoking show opposite trends

Real price of cigarettes and youth smoking prevalence, US, 1975-2001



Source: ImpacTeen, 2002

What is the “right” level of tax?

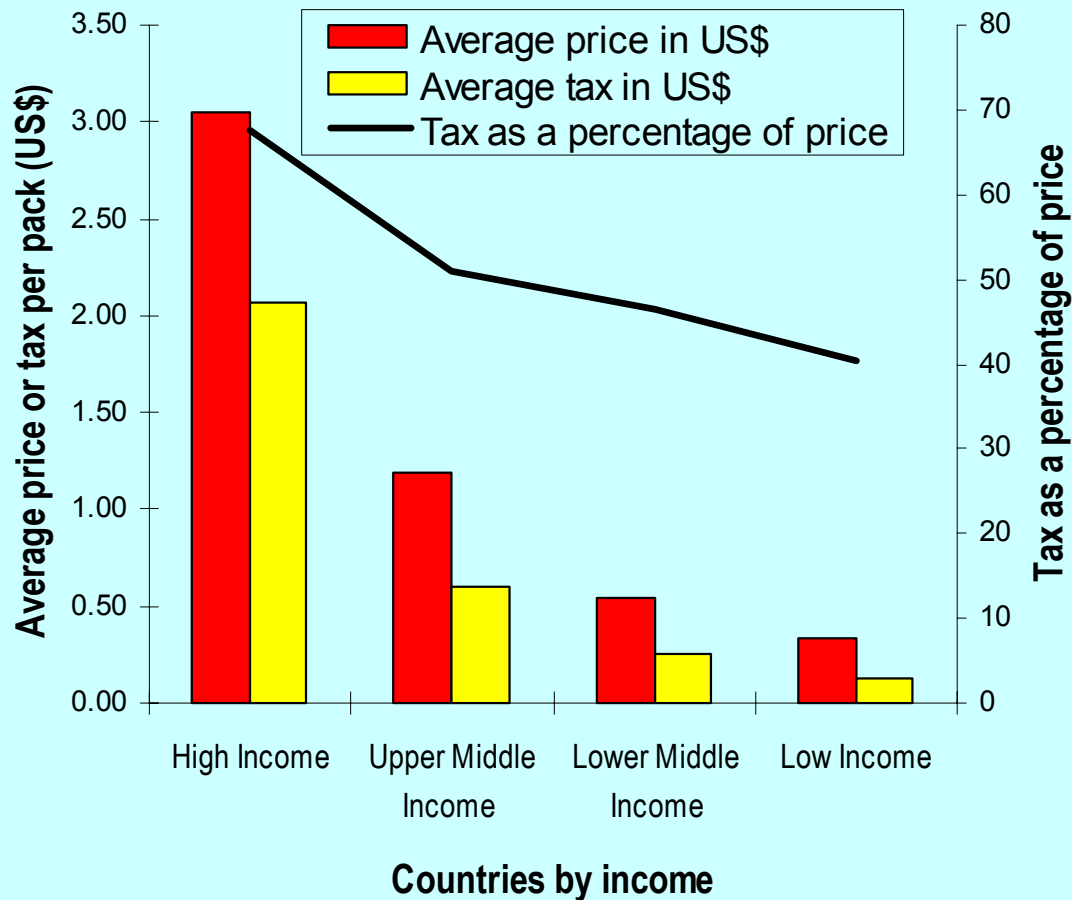
- **Complex question**

- ◆ 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)

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

Comprehensive Programs and Tobacco Use

■ Comprehensive programs include:

- ◆ Mass-media information/counteradvertising campaigns
- ◆ support for cessation
- ◆ school and community-based efforts
- ◆ policy interventions
- ◆ Surveillance and evaluation

■ Often funded by dedicated tobacco tax revenues

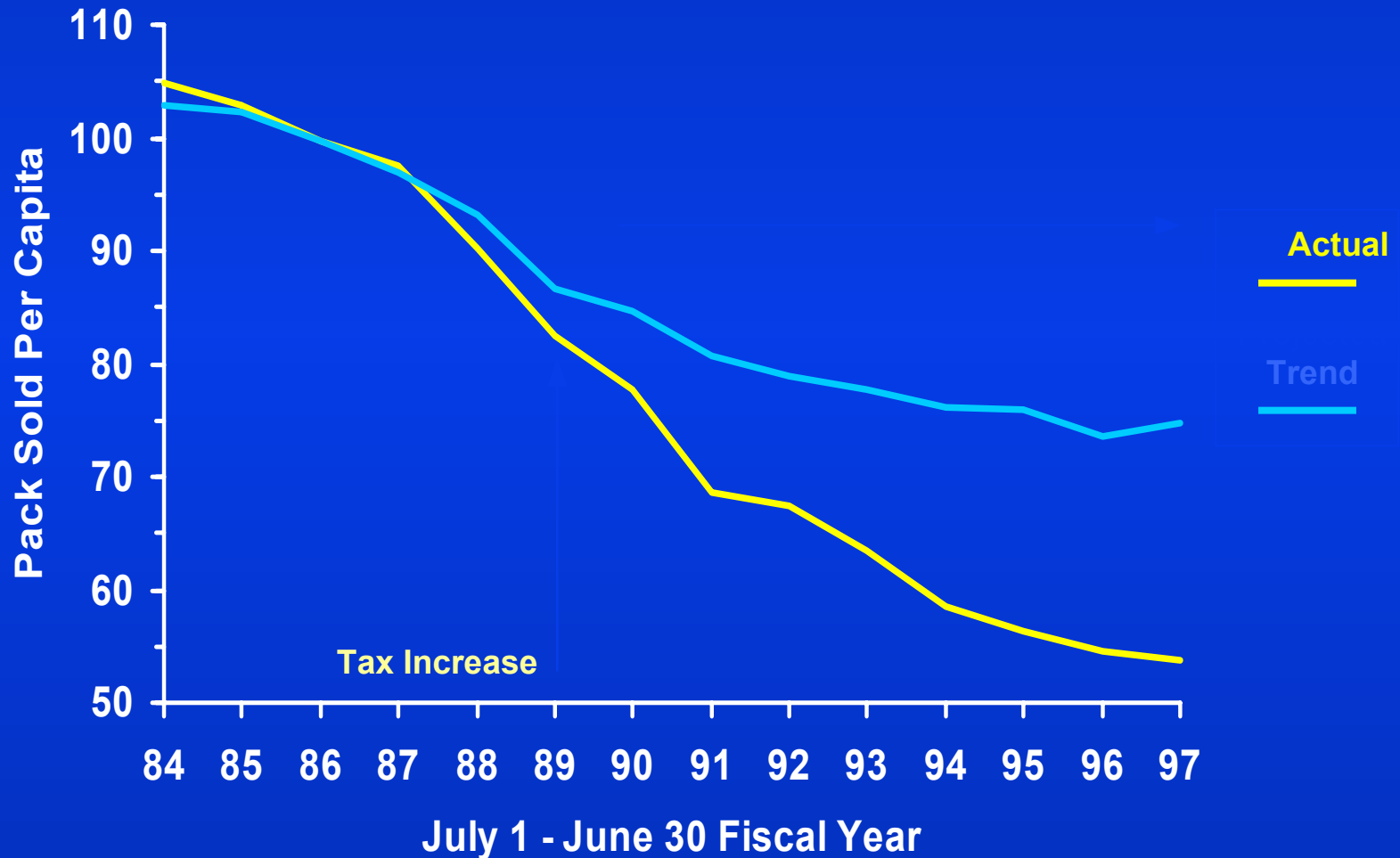
- ◆ Several US states, Thailand, Australia, many others

■ Well-funded comprehensive programs:

- ◆ Increase cessation, prevent initiation, and reduce consumption
- ◆ Significantly reduce disease, disability and death from tobacco

Source: US CDC, 2001; US DHHS, 2000

Per Capita Consumption Trends California versus Projected Trend, 1984-1997



Source: CDC

Interventions to reduce supply

Most measures to reduce supply ineffective or carry other consequences

- 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 can lead to repercussions
- Governments should apply other effective control measures without discrimination against domestic or imported cigarettes.

Source: Chaloupka and Laixuthai, 1996; Taylor *et al.*, 2000

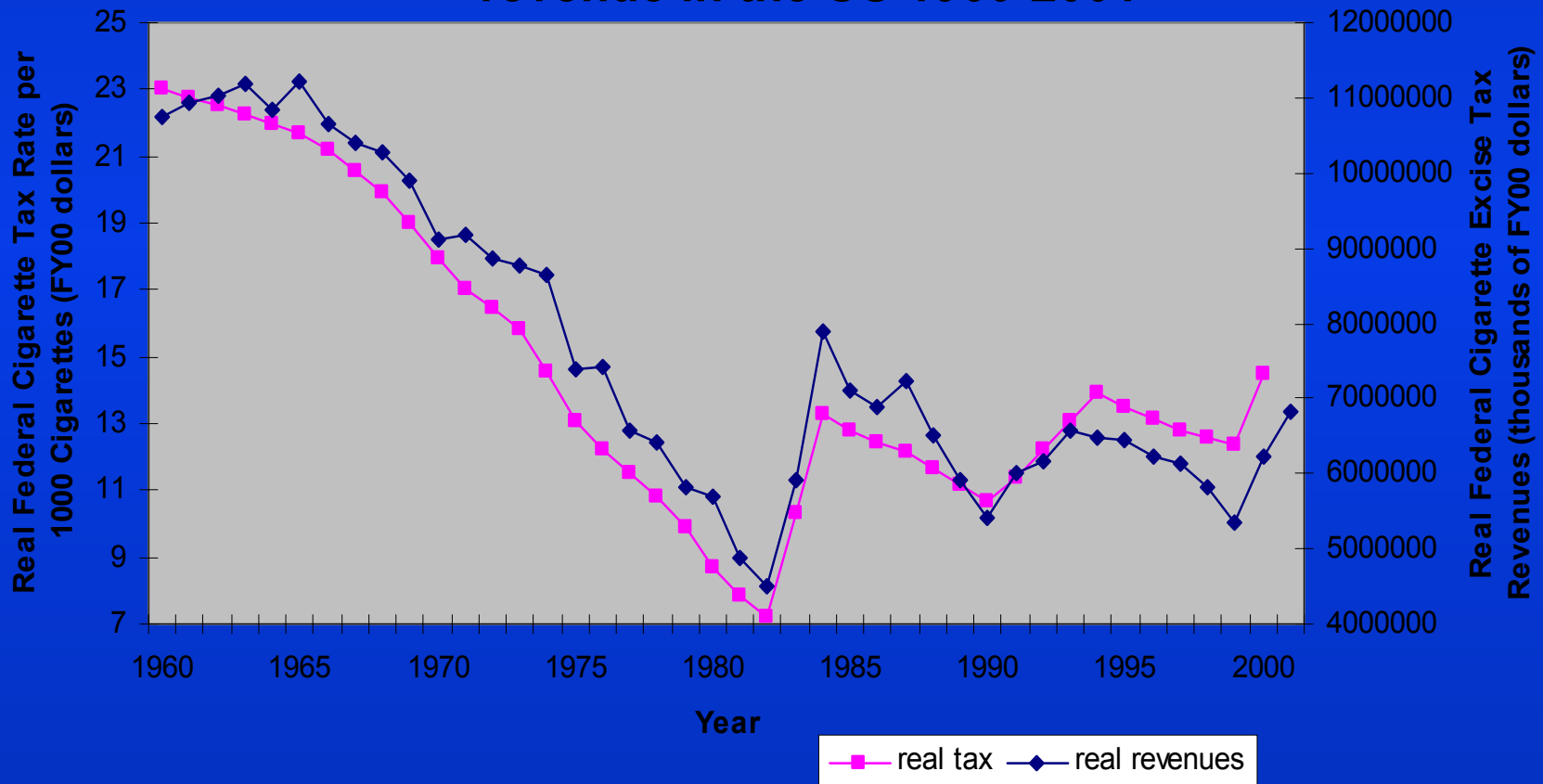
What are the costs of tobacco control?

- **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 Federal cigarette tax rate and real cigarette tax

revenue in the US 1960-2001

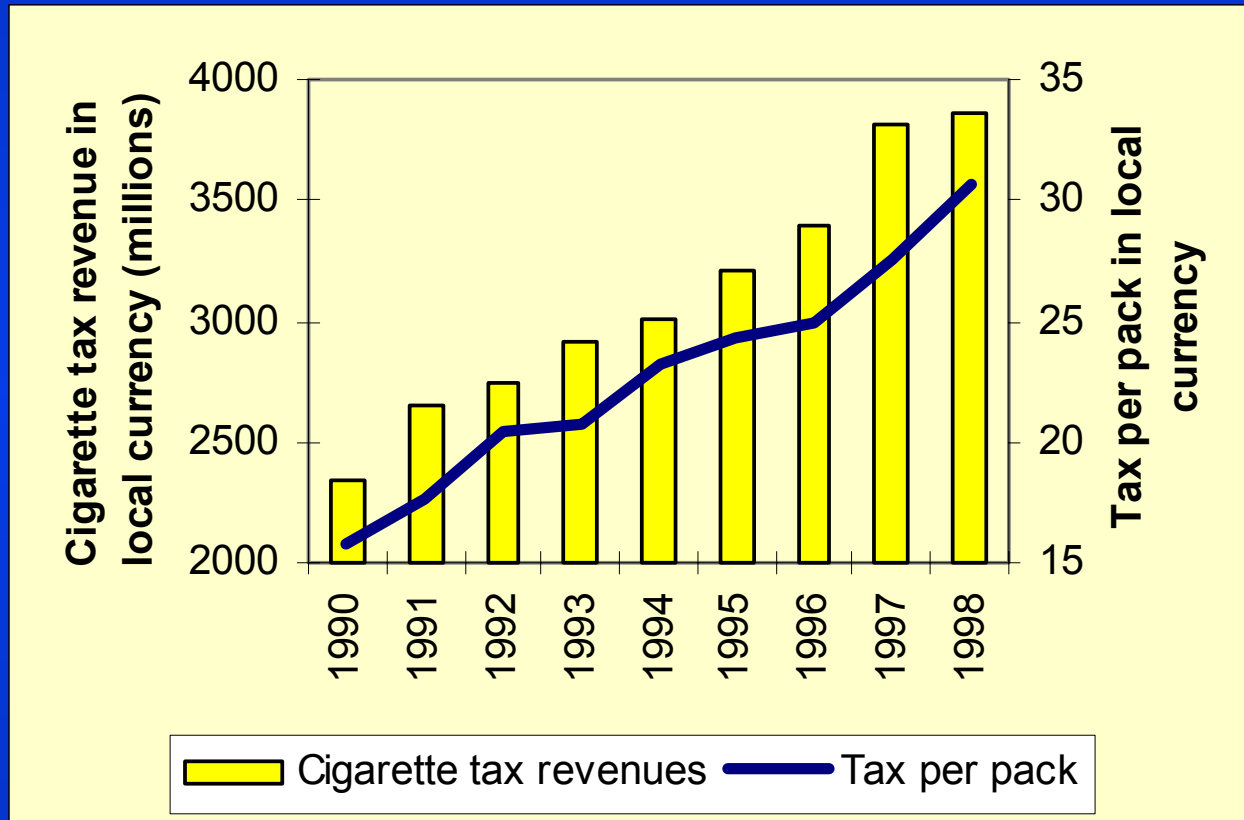


Source: ImpacTeen, 2002

As cigarette tax rises, revenues increase (2)

Tax per pack and cigarette tax revenues in Norway, 1990-

1998

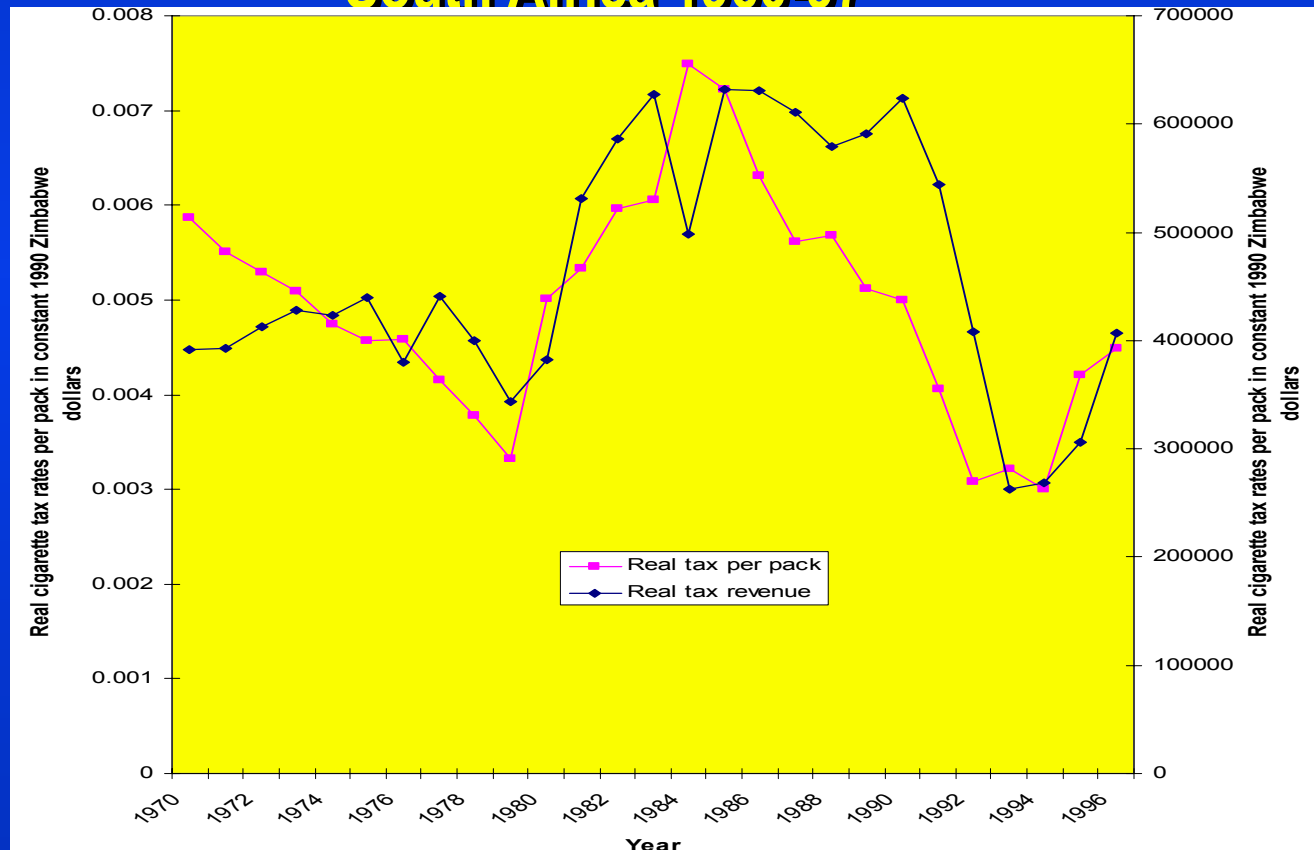


Source: World bank 1999

Cigarette tax increases result in higher tax revenues (3)

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

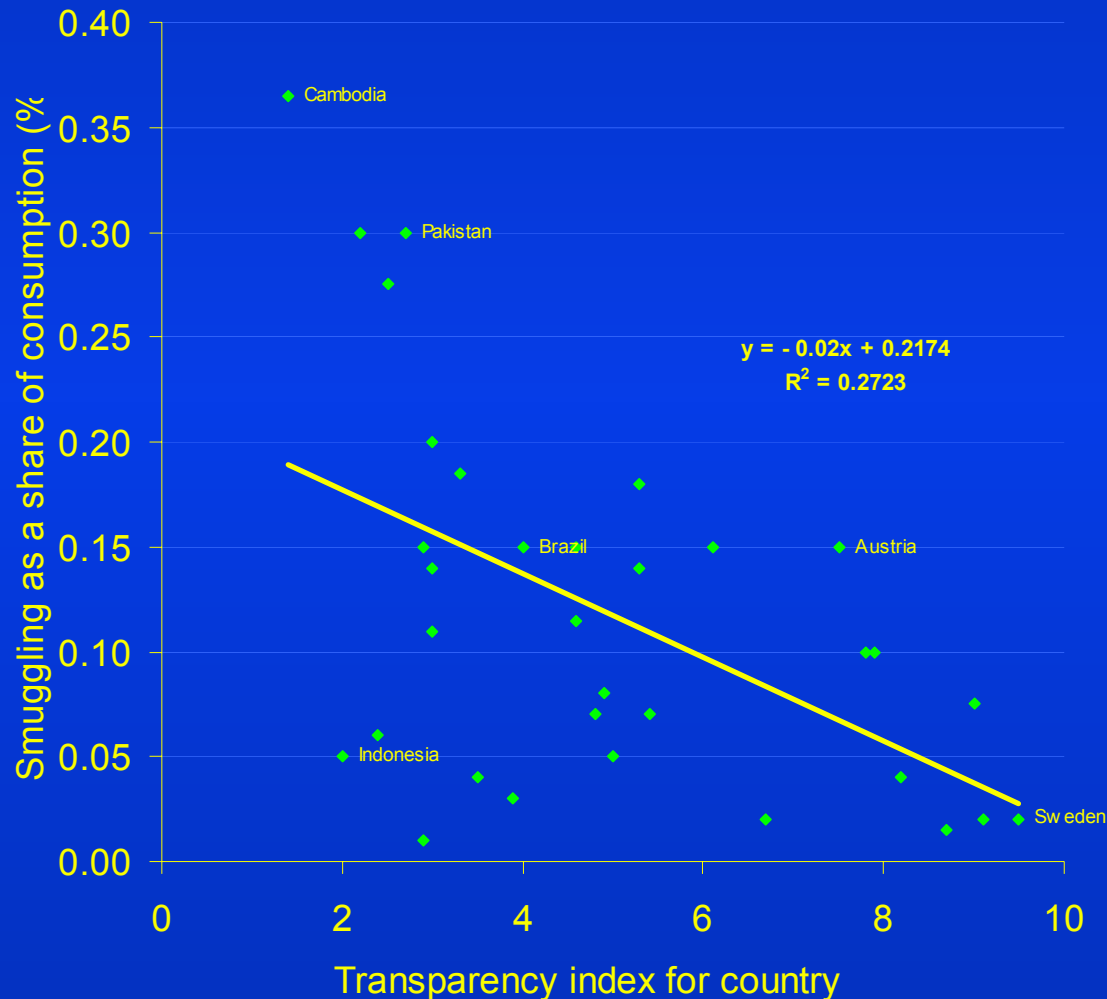
Smuggling of Cigarettes

- **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**

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%

Impact on the Poor

- Tax increases can be progressive
 - ◆ Greatest sensitivity to price in lowest income populations
- Tobacco taxes should be considered in context of overall tax and spending system
 - ◆ Revenues generated from tax can be used to support programs targeting the poor
- Health benefits of tobacco control are progressive
 - ◆ Tobacco accounts for about half of health gap between the rich and poor

Source: Chaloupka et al., 2000; Bobak 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

- **Strong economic rationale for government intervention in tobacco markets**
- **Significant tax increases single most effective policy in reducing tobacco use and its consequences**
- **Other demand-side measures also effective in reducing tobacco consumption**
- **Control of smuggling is the major supply-side intervention**
- **Economic arguments against tobacco control are misleading and often false or overstated**
- **Tobacco control is cost-effective**