

Tobacco Excise Taxes

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Overview

- Tobacco Taxation
 - Motivation for taxing tobacco products
 - Types of tobacco taxes
 - Federal, state, and local tobacco taxes
 - Tobacco taxes and prices
 - Tobacco industry price manipulation, price marketing
- Impact of tobacco taxes/prices on
 - Aggregate consumption
 - Prevalence, cessation, initiation
 - Key populations (youth, poor, pregnant women)

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Why Tax Tobacco Products?

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Why Tax Tobacco?

"Sugar, rum, and **tobacco**, are commodities which are no where necessities of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation. In the mean time the people might be relieved from some of the most burdensome taxes; from those which are imposed either upon the necessities of life, or upon the materials of manufacture. The labouring poor would thus be enabled to live better, to work cheaper, and to send their goods cheaper to market. The cheapness of their goods would increase the demand for them, and consequently for the labour of those who produced them. This increase in the demand for labour, would both increase the numbers and improve the circumstances of the labouring poor. Their consumption would increase, and together with it the revenue arising from all those articles of their consumption upon which the taxes might be allowed to remain."

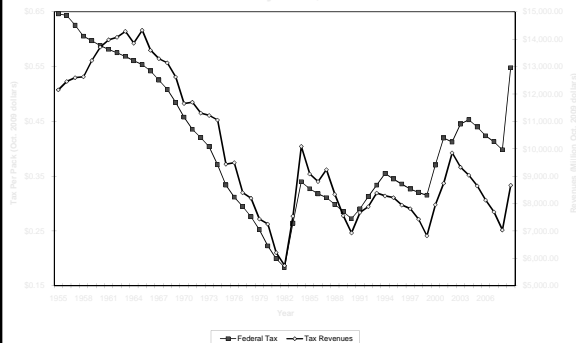
Adam Smith, *An Inquiry into the Nature and Causes of The Wealth of Nations* ⁴

Why Tax Tobacco?

- **Efficient revenue generation**
 - Primary motive historically and still true in many countries today
 - Very efficient source of revenue given:
 - Historically low share of tax in price in many countries
 - Relatively inelastic demand for tobacco products
 - Few producers and few close substitutes
 - One of many goods/services that satisfies the "Ramsey Rule"
 - "This vice brings in one hundred million francs in taxes every year. I will certainly forbid it at once – as soon as you can name a virtue that brings in as much revenue" – Napoleon III

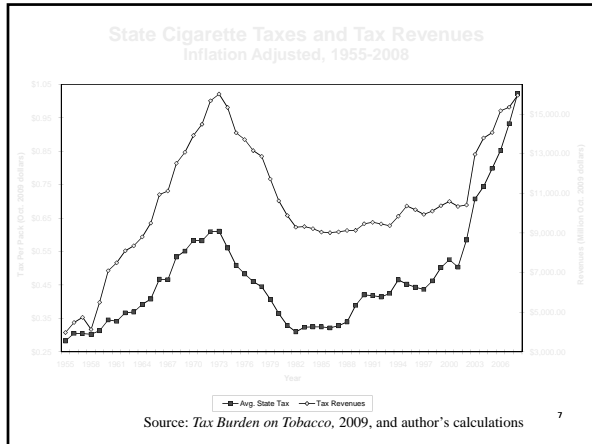
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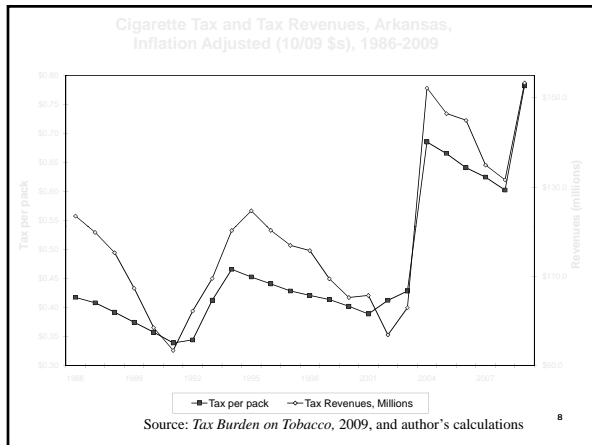
Federal Cigarette Tax and Tax Revenues
Inflation Adjusted, 1955-2009



Source: *Tax Burden on Tobacco*, 2009, and author's calculations

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Why Tax Tobacco?

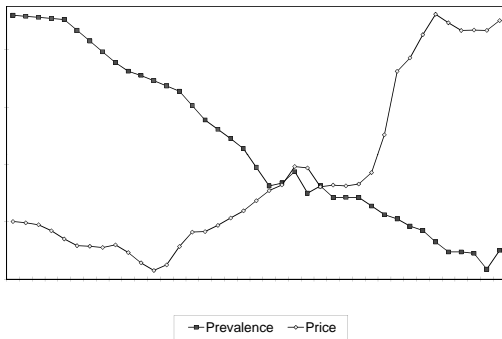
- **Promote public health**
 - Increasingly important motive for higher tobacco taxes in many high income countries
 - Emerging as important factor in some low and middle income countries
 - Based on substantial and growing evidence on the effects of tobacco taxes and prices on tobacco use
 - Particularly among young, less educated, and low income populations
 - *"... We [] have a package of six policy measures, known as MPOWER, that can help countries implement the provisions in the Convention. All six measures have a proven ability to reduce tobacco use in any resource setting. **But tobacco taxes are by far the most effective.**"* Director General Dr. Margaret Chan, WHO, 2008

WHO FCTC

- Article 6: Price and tax measures to reduce the demand for tobacco
 - "The parties recognize that price and tax measures are an effective and important means of reducing tobacco consumption by various segments of the population, in particular young persons."
 - "...each Party should...adopt or maintain, as appropriate, measures which may include:
 - implementing tax policies and where appropriate price policies on tobacco products so as to contribute to the health objectives aimed at reducing tobacco consumption; and
 - Prohibiting or restricting, as appropriate, sales to and/or importations by international travellers of tax- and duty-free tobacco products."

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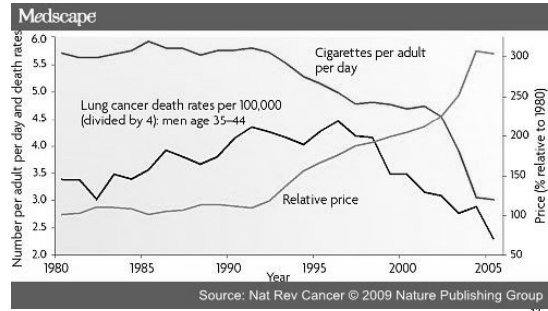
Cigarette Prices and Adult Smoking Prevalence, United States, 1970-2008



Source: *Tax Burden on Tobacco*, 2009, National Health Interview Survey, and author's calculations

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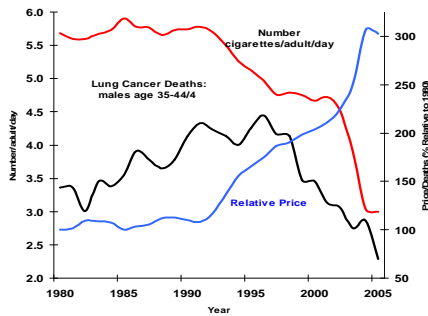
Taxes, Prices and Health: US, 1980-2005



Source: Nat Rev Cancer © 2009 Nature Publishing Group

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France: smoking, tax and male lung cancer, 1980-2000



Source: Jha, 2009

Why Tax Tobacco?

- **Cover the external costs of tobacco**
 - “Pigouvian” tax
 - Less frequently used motive
 - Account for costs resulting from tobacco use imposed on non-users
 - Increased health care costs, lost productivity from diseases/death caused by exposure to tobacco smoke
 - Increased financial costs from publicly financed health care to treat diseases caused by tobacco use
 - Can also include “externalities” that result from addiction, imperfect information, and time inconsistent preferences

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WHO's Best Practices in Tobacco Taxation

- Use tobacco excise tax increases to achieve the public health goal of reducing the death and disease caused by tobacco use
 - As called for in Article 6 of the WHO FCTC
 - Additional benefit of generating significant increases in tobacco tax revenues in short to medium term

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Types of Tobacco Product Taxes

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Types of Tobacco Taxes

■ Variety of tobacco taxes

- Taxes on value of tobacco crop
- Customs duties on tobacco leaf imports and/or exports
- Customs duties on tobacco product imports and/or exports
- Sales taxes/Value added taxes
- Implicit taxes when government monopolizes tobacco product production and/or distribution
- Tobacco excise taxes (or similar taxes)
 - Many of these are applied to variety of agricultural and/or consumer goods and services
 - Excise taxes are of most interest given specificity to tobacco products (and a few others products – e.g. alcoholic beverages, motor vehicle fuel)

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Types of Tobacco Taxes

■ Tobacco Excise Taxes

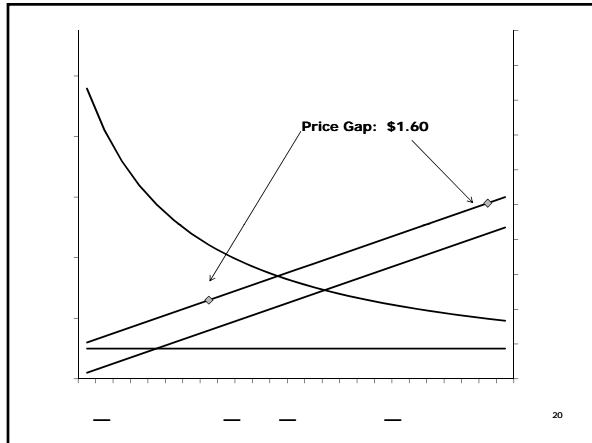
- Two types of excises
 - Specific Taxes: excises based on quantity or weight (e.g. tax per pack of 20 cigarettes)
 - Ad Valorem taxes: excises based on value of tobacco products (e.g. a specific percentage of manufacturer's prices for tobacco products)
- Some countries use a mix of specific and *ad valorem* tobacco excises, differential taxes for different products of given type, minimum taxes, etc.
- Many countries apply different types of taxes and/or tax rates on different types of tobacco products (e.g. manufactured cigarettes vs. bidis)

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Types of Tobacco Taxes

- **Choice of tobacco excises affects and/or depends upon:**
 - Relative prices of different brands within product category
 - e.g. filtered vs. unfiltered, longer vs. shorter, heavier vs. lighter, premium vs. discount, etc.
 - Stability, predictability of tax revenues
 - Inflation
 - Real value of revenues over time
 - Mix of products/brands available on the market
 - e.g. more expensive imports vs. low price domestic brands
 - Mix of products consumed
 - Potential for substitution in response to tax increase
 - Ease of administration
 - More.....

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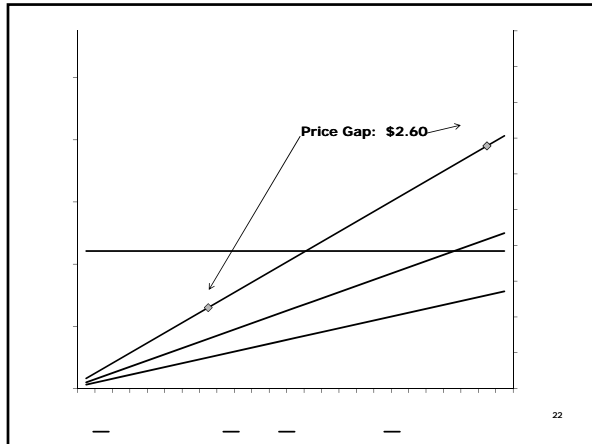


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Types of Tobacco Taxes

- **Specific taxes:**
 - Easier to administer
 - No valuation issues
 - Real value falls with inflation
 - Smaller price gap between high/low priced brands
 - Generally produce more stable stream of revenue
 - Promote higher "quality" products
 - Producers keeps all of additional price from higher quality products

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Types of Tobacco Taxes

- *Ad valorem* taxes:
 - More difficult to administer given variety of different prices
 - Valuation problems, abusive "transfer" pricing
 - May require minimum price policies
 - More likely to keep pace with inflation
 - More unstable revenues
 - Government subsidizes industry price cuts but benefits from industry price increases
 - Larger price gap
 - Greater potential for "switching down" in response to tax increase
 - Favor low "quality" products
 - Less incentive to invest in quality given price rises by more
 - May be protective for domestic industry
 - if imports or foreign-owned brands tend to be higher quality/price
 - More "equitable"
 - Absolute amount of tax higher on higher priced brands²³

Types of Tobacco Taxes

- Mixed systems
 - More difficult to administer given variety of different prices
 - Valuation problems, abusive "transfer" pricing
 - Better able to keep pace with inflation
 - Somewhat less stable revenues
 - Government still subsidizes industry price cuts and benefits from industry price increases, just not as much
 - Reduced price gap
 - Relative to pure ad valorem
 - More protective for domestic industry
 - Relative to pure specific
 - Somewhat more "equitable"

Research Findings

- Greater reliance on specific tobacco excises will:
 - Reduce gap in prices between high and low priced cigarette brands
 - Produce more stable, predictable stream of cigarette excise tax revenues
 - Have greater impact on cigarette smoking

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WHO's Best Practices in Tobacco Taxation

- Simpler is better
 - Complex tax structures more difficult to administer
 - Greater opportunities for tax evasion and tax avoidance under complex tax structures
 - Where existing structure is more complex, simplify over time with goal of achieving single uniform tax

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WHO's Best Practices in Tobacco Taxation

- Rely more on specific tobacco excises as the share of total excises in prices increases
 - Greater public health impact of specific excises given reduced opportunities for switching down in response to tax/price increases
 - Sends clear message that all brands are equally harmful
 - Where existing tax is ad valorem, adopt a specific tax and increase reliance on specific tax over time

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US Tobacco Excise Taxes

Tobacco Taxation in the U.S.

- Federal cigarette tax
 - Specific (per unit) excise tax
 - initially adopted in 1864
 - Raised during war time/lowered during peace time
 - Set at 8 cents per pack in 1951
 - Doubled to 16 cents per pack in 1983
 - Eventually raised to 39 cents per pack in 2002
 - Less than 60% of inflation adjusted value of 1951 tax
 - Significant increase – 61.66 cents – April 1, 2009
 - Earmarked for S-CHIP expansion

Tobacco Taxation in the U.S.

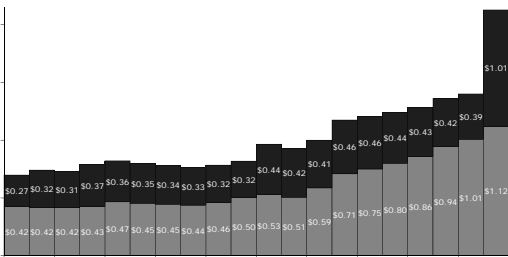
- Specific federal excise taxes on most other tobacco products, including
 - cigars: \$1.0066 per pack on small cigars; 52.75% of price for low priced cigars; cap of 40.26 cents per cigar for high priced cigars
 - chewing tobacco: 3.1 cents per ounce
 - moist snuff: \$1.51 per pound
 - roll-your-own tobacco \$24.78 per pound
 - pipe tobacco: \$2.83 per pound
 - rolling papers: 1.26 cents per pack
- Until latest increases, most were lower than cigarette tax; more equivalent now
- Similar infrequent increases in taxes

Tobacco Taxation in the U.S.

- State taxes on other tobacco products
 - All but PA tax other tobacco products
 - Mostly *ad valorem* taxes, but increasing movement towards specific taxes
 - Typically applied to wholesaler/distributor price
 - Highest taxes include:
 - Wisconsin – 100%
 - Washington - 95%
 - Lowest taxes include:
 - South Carolina – 5%
 - Tennessee 6.6%
 - Average about 35%

Tobacco Taxation in the U.S.

- Local Taxes
 - Many localities add additional tax
 - Typically a few cents/pack, with some exceptions:
 - » \$1.50 in New York City
 - » \$2.68 in Chicago/Cook county
 - » Many Alaska communities \$1.00 or more
 - » Many Virginia communities \$0.50 or more
 - Sales tax applied to tobacco products in most states
 - Usually, but not always, applies to price inclusive of excise taxes



Source: *Burden on Tobacco*, 2009, and author's calculations

WHO's Best Practices in Tobacco Taxation

- Automatically adjust specific tobacco taxes for inflation
 - Unless adjusted, real value falls over time, as does the real value of revenues generated by tax
 - Ensures the public health impact of tax is maintained
 - To date, not widely done (Australia, New Zealand)

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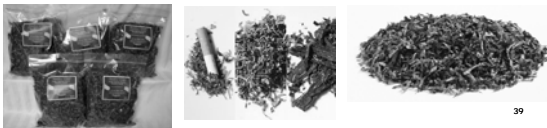
WHO's Best Practices in Tobacco Taxation

- Adopt comparable taxes and tax increases on all tobacco products
 - Reduces potential for substitution to other products that would result from differential tax treatment and/or tax increases
 - Maximizes public health and revenue impact of taxes/tax increases
 - Harm reduction?

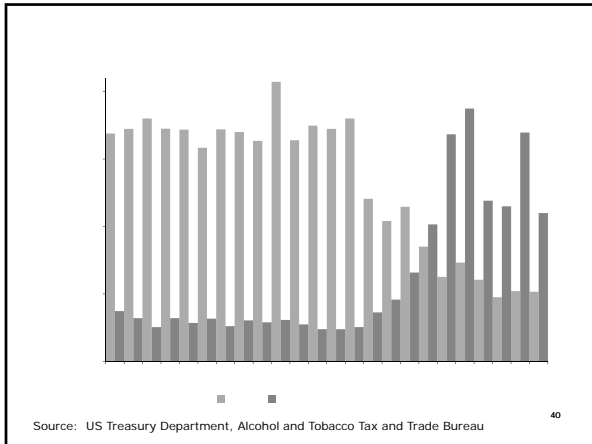
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Other Issues when Increasing Tobacco Taxes

- Product definitions
 - Roll-your-own vs. pipe tobacco
 - Federal taxes before 4/1/2009
 - Both taxed at \$1.0969/lb
 - After 4/1/2009
 - roll-your-own tobacco \$24.78 per pound
 - pipe tobacco: \$2.83 per pound



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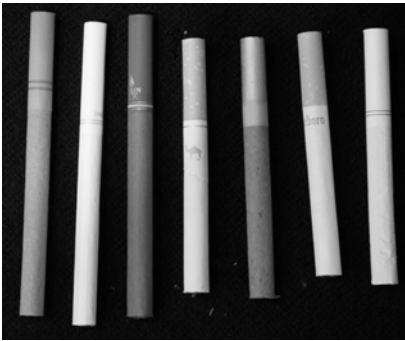


Other Issues when Increasing Tobacco Taxes

- Product definitions
 - Little cigars
 - Include tobacco remnants in the paper so as to not meet the typical definition of a cigarette:
 - A roll of tobacco wrapped in any substance other than tobacco
 - Any substance containing tobacco that, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling is likely to be offered to or purchased by consumer as a cigarette



CIGARETTES VS. "SMALL CIGARS"



Source: Eric Lindblom, Campaign for Tobacco-Free Kids

Other Issues when Increasing Tobacco Taxes

- Little cigars
 - Results in
 - Lower taxes in many states
 - Exempt from various product regulations related to flavorings, packaging, marketing
 - Can be avoided by redefining cigarettes to include:
 - "any roll of tobacco that weighs no more than four and a half pounds per thousand (unless wrapped in whole tobacco leaf and does not have a cellulose acetate or other cigarette-like filter
 - Redefine cigars as "any roll of tobacco that is not a cigarette"

Source: Eric Lindblom, Campaign for Tobacco-Free Kids

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Other Issues when Increasing Tobacco Taxes

- Product definitions
 - Non-combustible tobacco products



Other Issues when Increasing Tobacco Taxes

- Product definitions
 - Non-combustible tobacco products – redefine smokeless tobacco products (or ‘other tobacco products’, ‘tobacco products’ to include:
 - “any other product containing tobacco that is intended or expected to be consumed without being combusted”

Source: Eric Lindblom, Campaign for Tobacco-Free Kids

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Other Issues when Increasing Tobacco Taxes

- Product definitions
 - Smokeless tobacco product taxes
 - Particularly challenging when it comes to specific taxation
 - In recent years, UST pushing states to move from *ad valorem* to specific, weight based taxes
 - 4 states and Federal smokeless taxes currently weight based

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LOW-WEIGHT MOIST SNUFF

 Camel Snus 1 tin (15 pouches) = 0.32 oz.	 Traditional Moist Snuff Smokeless 1 tin = 1.2 to 1.5 oz.	 UST Skoal Pouches 1 tin (20 pouches) = 0.82 oz
 Stonewall Hard Snuff 1 box of 20 “Pieces” = 0.335 oz.	 Marlboro Snus 1 “foil pack” (6 pouches) = 0.1 oz.	 Camel Orbs 1 box of 15 “Pieces” = 0.12 oz.

Source: Eric Lindblom, Campaign for Tobacco-Free Kids

Weights of other Camel Dissolvables unavailable

Other Issues when Increasing Tobacco Taxes

- Smokeless tax options:
 - *Ad valorem*
 - Relatively easy administratively
 - Creates large price gaps within a given product category
 - Taxes more consistent across different types of smokeless products
 - Tax increases with inflation

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Other Issues when Increasing Tobacco Taxes

- Smokeless tax options:
 - Specific
 - Relatively easy administratively
 - Minimizes price gaps within a given product category
 - Taxes can be significantly different across different types of smokeless products
 - Tax needs to be regularly increased to keep pace with inflation

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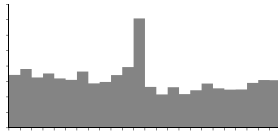
Other Issues when Increasing Tobacco Taxes

- Smokeless tax options:
 - Mixed system – *ad valorem* with specific minimum
 - Somewhat more difficult administratively
 - Reduce price gaps within a given product category
 - Limit differences in taxes and prices across different types of smokeless products
 - Specific component of tax needs to be regularly increased to keep pace with inflation

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Other Issues when Increasing Tobacco Taxes

- "Inventory" or "Floor" tax
 - Collect increase in taxed on products in inventory taxed under old tax rate to avoid stockpiling in anticipation of tax increase



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Other Issues when Increasing Tobacco Taxes

- Adjust "discount" or "rebate" provided to stampers
 - Avoids windfall for distributors who apply stamps; revenues go to state instead

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WHO's Best Practices in Tobacco Taxation

- Eliminate tax or duty free sales of tobacco products
 - As called for in Article 6 of FCTC
 - Reduces opportunities for individual tax avoidance
 - Maximizes public health and revenue impact of taxes/tax increases

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Tobacco Taxes and Prices

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Tobacco Taxes and Prices

- Pass through of tax to price:
 - “Undershifting” – price rises by less than the amount of the tax
 - “Overshifting” – price rises by more than the amount of the tax
- Depends on:
 - Market structure
 - More competitive, more likely to see full pass through
 - More concentrated, may see overshifting or undershifting
 - Type of tax
 - Specific tax can lead to more overshifting

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Tobacco Taxes and Prices

- Federal taxes increases tend to be fully passed on in prices
 - Big exception - doubling of federal tax in 1983:
 - *“Last time, of course, we increased prices five times between February of 1982 and January of 1983. In less than a year, the price went from \$20.20 to \$26.90 per thousand (\$2.70 more than the tax), and this fact was not lost on consumers, who could legitimately blame the manufacturers for the price increases. While price increases of this magnitude might have been tolerated during the rapid escalation in the overall inflation rate between 1977 and 1981, the increase in the price of cigarettes in 1982-83 was made even more dramatic by the fact that the overall rate of inflation was slowing considerably.”* (Myron Johnston, PM, 1987)

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Tobacco Taxes and Prices

- With respect to Harris (1987) paper - *"The conclusion of greatest interest to us, and one with which I cannot disagree, is that by increasing prices by more than the amount of the excise tax, we priced ourselves out of the market."*
- *"I have been asked for my views as to how we should pass on the price increase in the event of an increase in the excise tax. My choice is to do what I suggested to Wally McDowell in 1982: Pass on the increase in one fell swoop and make it clear to smokers that the government is solely responsible for the price increase, advertise to that effect, suggest that people stock up to avoid the price increase, and recommend that they refrigerate their cigarettes "to preserve their freshness." . . . Then when people exhaust their supply and go to the store to buy more, they will be less likely to remember what they last paid and will be less likely to suffer from "sticker shock." As a result, they should be less likely to use the price increase as an incentive to stop smoking or reduce their consumption."*

Myron Johnston, PM, 1987

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Tobacco Taxes and Prices

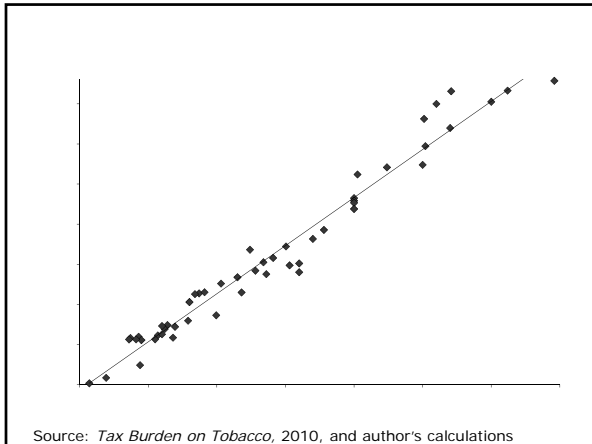
- Most recent Federal Tax Increase: 61.66 cents per pack, April 1, 2009
- Philip Morris Price Increase: 71 cents per pack on "growth and support brands" and 78 cents per pack on "non-support brands"
 - weeks before FET increase went into effect
 - followed by Reynolds and Lorillard

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Tobacco Taxes and Prices

- Pass through of state tax to price – empirical evidence mixed:
 - Most studies find that state taxes tend to be slightly less than fully passed on in prices
 - 10 cent tax increase leads to ~9 cent per pack price increase

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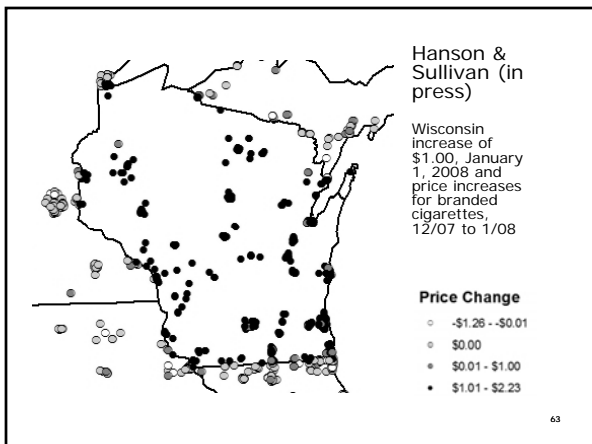


Source: *Tax Burden on Tobacco*, 2010, and author's calculations

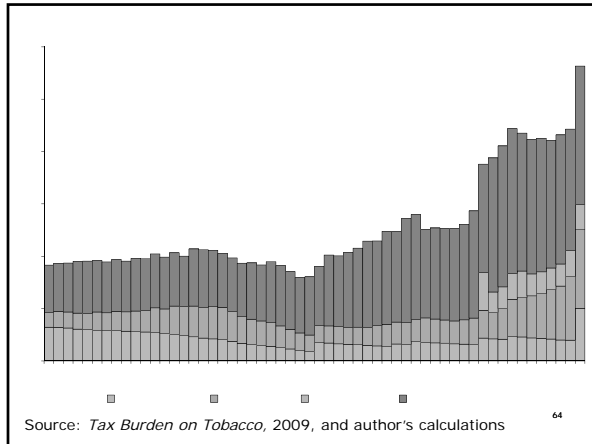
Tobacco Taxes and Prices

- Pass through of tax to price – empirical evidence mixed:
 - Recent work by Hanson and Sullivan (in press), Sullivan (unpublished) suggests geographic variability in over/under-shifting of recent state tax increases
 - based on potential for tax avoidance;
 - for WI's \$1.00 increase on Jan. 1, 2008
 - average price increase \$1.08-\$1.17
 - 53-71% lower increase for stores near state borders

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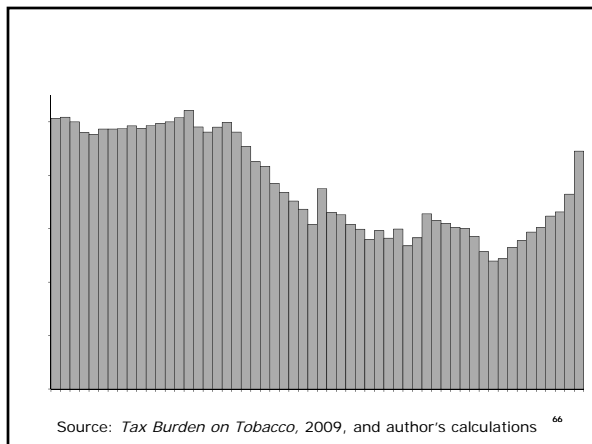
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WHO's Best Practices in Tobacco Taxation

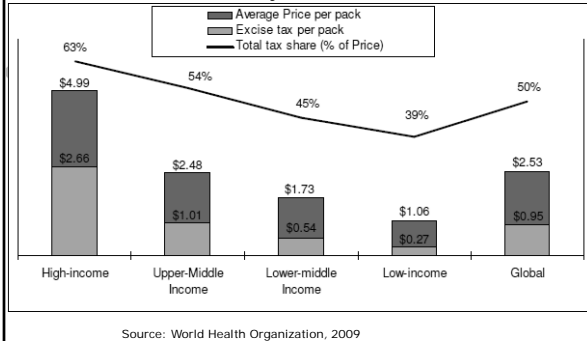
- Set tobacco excise tax levels so that they account for at least 70 percent of the retail prices for tobacco products
 - Update of World Bank 'yardstick' of any taxes accounting for 2/3 to 4/5 of retail prices
 - Well above where most countries are currently
 - Further increases in countries that do reach this target

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Taxes and Tobacco Product Prices Globally

- Tax levels and prices, vary widely across countries
- Price and Tax by Income Level, 2008



Tobacco Company Price-Related Marketing

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Tobacco Marketing

- Marketing Strategies – the 4 P's:
 - Product – design, packaging
 - Price – including price promotions
 - Place – availability, accessibility
 - Promotion – advertising, sponsorship, etc.
- Most effective campaigns are well-integrated across different dimensions of marketing

Source: NCI Monograph 19

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Price-Related Marketing: Price Discounts



Price-Related Marketing: Retail Value Added - product



Price-Related Marketing: Coupons



Price-Related Marketing: Free Product

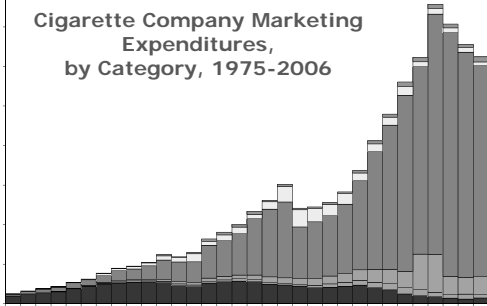


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Price-Related Marketing: Other Value Added

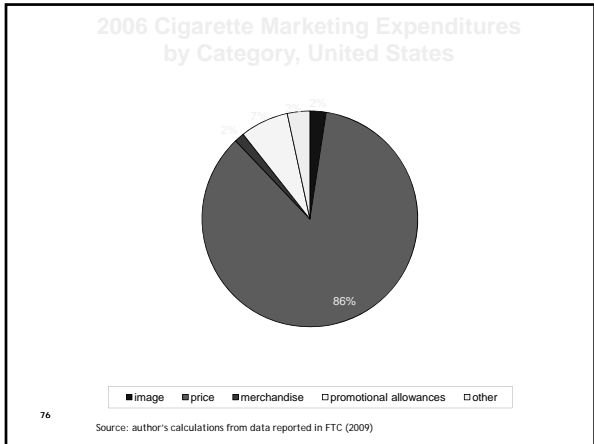


Cigarette Company Marketing Expenditures, by Category, 1975-2006



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Source: author's calculations from data reported in FTC (2009)



Price-Related Marketing and Tobacco Control

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Why Tax Tobacco?

- **Industry understands importance of tobacco taxes**

"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...."

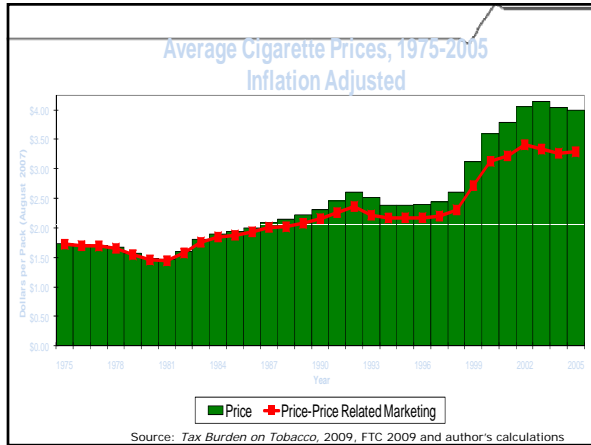
Philip Morris, "Smoking and Health Initiatives", 1985

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Price-Related Cigarette Marketing and Tobacco Control

- Evidence from internal documents that price-related marketing used to soften impact of tax increases (Chaloupka et al., 2002; Chaloupka et al., 1998)





Tobacco Industry Efforts to Offset Tax Increase

On February 4th, 2009, the Federal Government enacted legislation to fund the expansion of the State Children's Health Insurance Program (CHIP) that increases excise taxes on cigarettes by 158%.

As a result, you will see the price of all cigarettes, including ours, increase in retail stores.

We know times are tough, so we'd like to help. We invite you to register at Mar1558.com to become eligible for cigarette coupons and special offers using this code: MAR1558

Thank You,
Philip Morris USA

IARC Cancer Control Handbook 14

IARC HANDBOOKS OF CANCER PREVENTION
Tobacco Control
International Agency for Research on Cancer
World Health Organization
Volume 14
Effectiveness of Tax and Price Policies for Tobacco Control



Sufficient Evidence that:

Tobacco industry price discounting strategies, price-reducing marketing activities, and lobbying efforts mitigate the impact of tobacco excise tax increases.

WHO's Best Practices in Tobacco Taxation

- Include tobacco excise tax increases as part of a comprehensive strategy to reduce tobacco use
 - Other policies called for by WHO FCTC, MPOWER package
 - Comprehensive efforts strengthen social norms against tobacco, build public and political support for tax increases
 - Maximize the impact of the tax increases on public health
 - But reduce revenue impact

Taxes, Prices and Tobacco Use

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Taxes, Prices and Tobacco Use

■ Increases in tobacco product taxes and prices:

- Induce current users to try to quit
 - Many will be successful in long term
- Keep former users from restarting
- Prevent potential users from starting
 - Particularly effective in preventing transition from experimentation to regular use
- Reduce consumption among those who continue to use
- Lead to other changes in tobacco use behavior, including substitution to cheaper products or brands, changes in buying behavior, and compensation

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Taxes, Prices and Tobacco Use

■ Price-elasticity of demand:

- Percentage change in consumption resulting from a one-percent increase in price
 - For example, price elasticity of -0.5 indicates that a 1% increase in price will reduce consumption by 0.5% or that a 10% price increase will reduce consumption by 5%

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Taxes, Prices and Tobacco Use

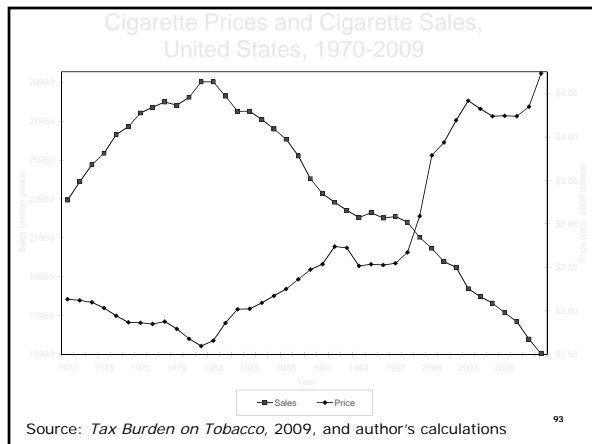
- Price-elasticity of demand:
 - Can be defined for a variety of behaviors/outcomes:
 - Overall consumption
 - Prevalence
 - Frequency of use
 - Quantity used by users (conditional demand)
 - Cessation
 - Initiation
 - Cross-price elasticities for changes in consumption of one products resulting from changes in price of another product
 - Short run, long run

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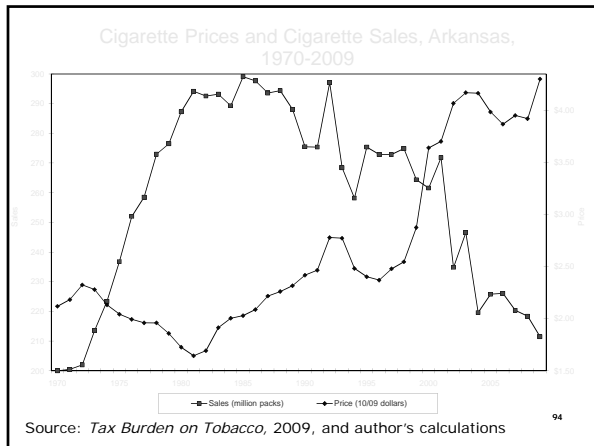
Taxes, Prices and Tobacco Use

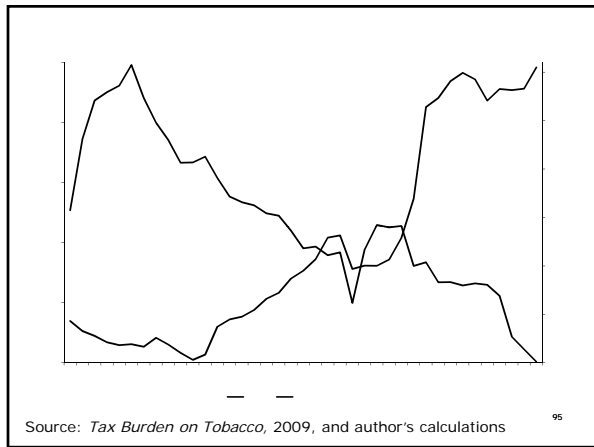
- Price-elasticity of overall demand:
 - In US and most high income countries, estimates tend to fall between -0.25 and -0.5
 - Cluster around -0.4
 - Long-run elasticity about double short-run elasticity
 - Estimates mostly based on tax-paid sales data
 - Biased away from zero when opportunities for tax avoidance, evasion not accounted for in estimation

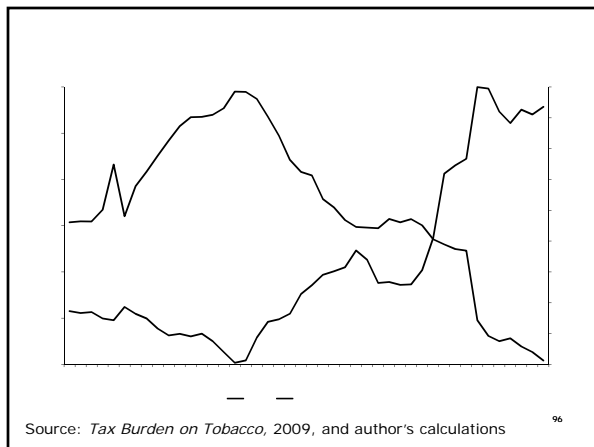
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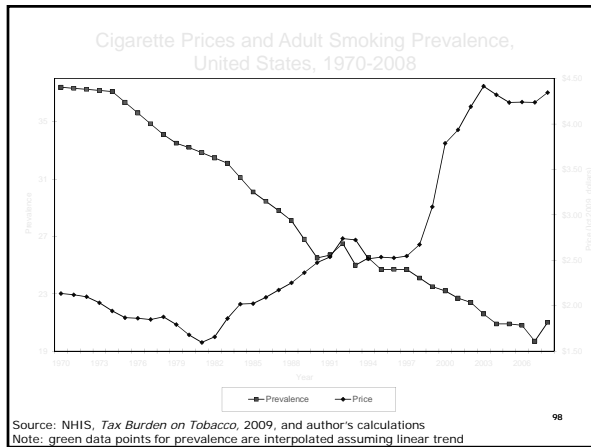




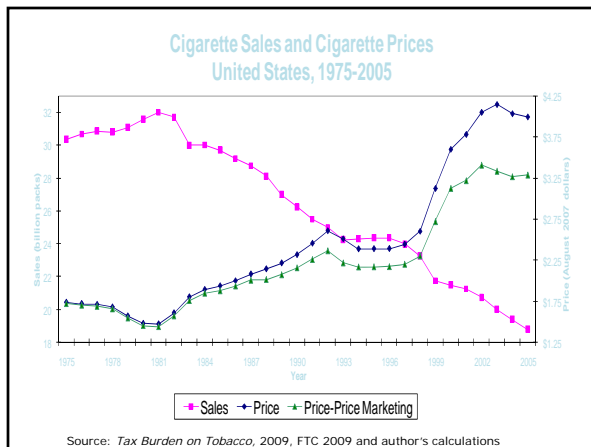
Taxes, Prices and Tobacco Use

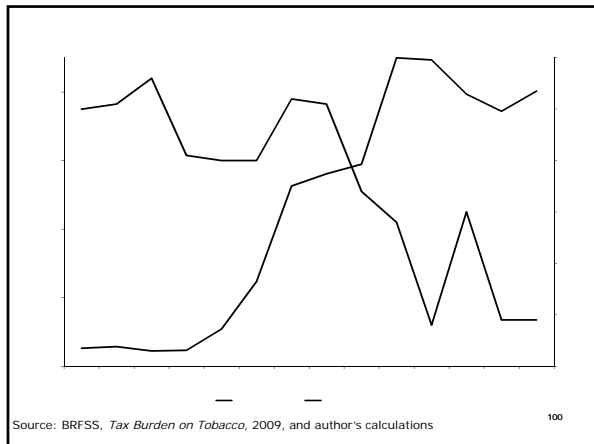
- **Studies based on individual data**
 - Produce comparable estimates of overall elasticity
 - Can disentangle effects of price on different aspects of tobacco use:
 - Prevalence
 - Intensity (frequency, amount consumed)
 - Among key subpopulations
 - Price effect split between impact on prevalence and impact on intensity
 - Elasticities of -0.2 for each

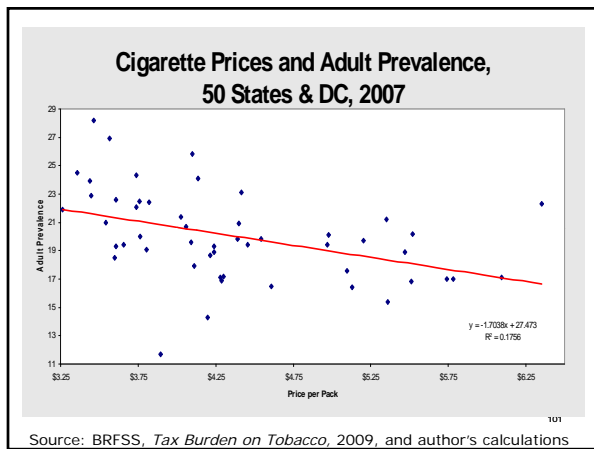
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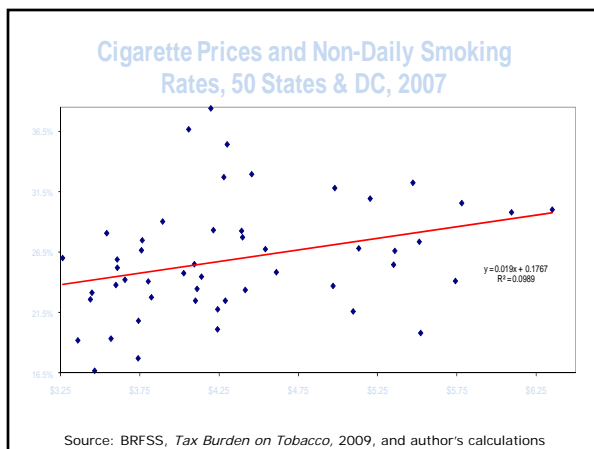


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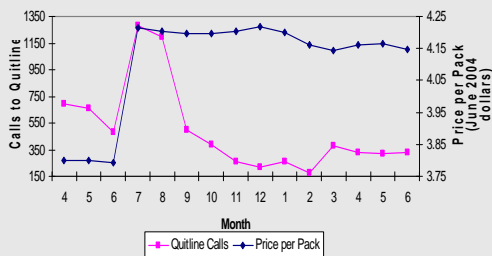
Taxes, Prices and Tobacco Use

■ Cessation

- Relatively few studies
 - Elasticities for short-run impact on cessation around 1.0 to 1.2
 - Significant number of quit attempts in response to higher taxes
 - Long-run cessation around 0.2
 - Many who try to quit in response to price increase eventually relapse
- High cross-price elasticities for nicotine replacement and other smoking cessation therapies

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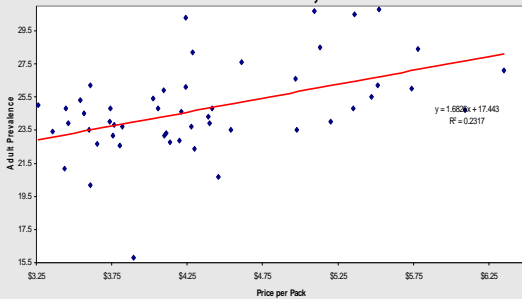
Cigarette Price and Quitline Calls - Illinois, 2002-2003



Source: Chaloupka et al., 2005

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Cigarette Prices and Former Smoking Rates, 50 States & DC, 2007



Source: BRFSS, Tax Burden on Tobacco, 2009, and author's calculations

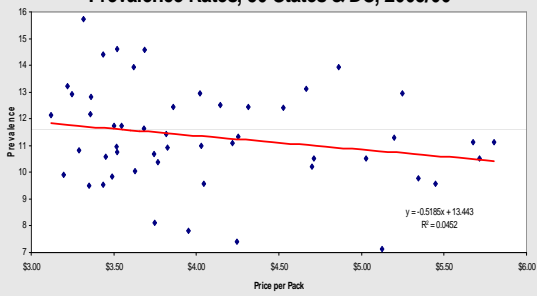
Taxes, Prices and Tobacco Use

- Price sensitivity and age
 - Economic theory predicts that youth would be more price sensitive:
 - Lower incomes of youth
 - Greater importance of peer influences on youth
 - Influence of addiction
 - Greater preference for the present among youth
 - Other indirect channels

Source: Chaloupka, 2003

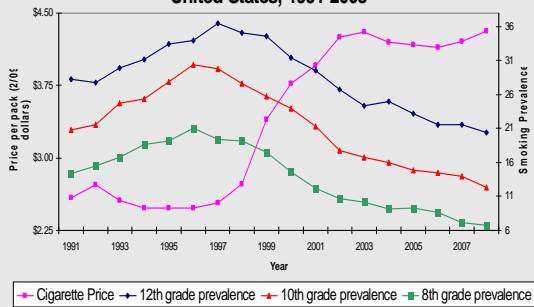
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Cigarette Prices and 12-17 Year Old Smoking Prevalence Rates, 50 States & DC, 2005/06



Source: NSDUH, *Tax Burden on Tobacco*, 2009, and author's calculations

Cigarette Price and Youth Smoking Prevalence, United States, 1991-2008



Source: MTF, *Tax Burden on Tobacco*, 2009, and author's calculations

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Taxes, Prices and Tobacco Use

- **Direct and Indirect Influences on Youth Smoking**
 - About 1/3 of impact works indirectly through effects on peer smoking
 - parental influences account for about 1/5 of overall impact of price on youth smoking prevalence
 - availability from social sources would fall as prices rise – youth less likely to share cigarettes with peers

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Taxes, Prices and Tobacco Use

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Cigarette Prices and Smoking among Pregnant Women

- Several studies find that higher taxes and prices significantly reduce smoking among pregnant women
 - 10% price rise reduces prevalence by 5-7%
 - Higher cigarette prices significantly reduce prevalence of low birth-weight births and other pregnancy complications caused by smoking
 - Improved birth outcomes result in substantial reductions in health care costs

Sources: Ringel and Evans, 2001; Evans and Ringel, 1999

Taxes, Prices and Tobacco Use

- Economic theory implies greater response to price by lower income/lower SES persons
- Evidence from U.S. and U.K. shows that cigarette price increases have greatest impact on smoking among lowest income and least educated populations
 - Farrelly et al. (2001) - smoking in households below median income level about four times more responsive to price than in households above median income level
 - Chaloupka (1991) – demand more elastic among less educated
 - Townsend et al. (1994) – British General Household Survey; highest SES insensitive to price; elasticity for lowest SES about -1.0

Taxes, Prices and Tobacco Use

- **Other tobacco product use, substitution effects**
 - Few studies have looked at price elasticity of demand for other tobacco products
 - Findings generally similar to those for cigarettes
 - Similarly, few studies have looked at cross-price effects
 - Generally find that increase in relative prices will lead some users to substitute to lower priced product
 - Evidence of substitution between price categories for same product
 - Some evidence that higher prices led to increased compensation (greater use of higher tar/nicotine cigarettes)
