Module 4: Economics

Costs of Tobacco Use

Introduction

Dr. Frank Chaloupka, Director of the Health Policy Center at the University of Illinois at Chicago, and an economist internationally recognized for his study of the economics of tobacco control, introduces the Costs of Tobacco Use Lecture.

Economics, at its core, studies how markets operate. Economists study when and how to intervene and to fix problems in markets in a way that improves everyone’s well-being.

The economics of tobacco control focuses on how the markets for tobacco products works. This includes investigating the demand side, the supply side, the consequences of these markets for individuals, society and the economy, and when and how to regulate tobacco products.

Learning Objectives

• Distinguish between private and social costs of tobacco use (and point in time vs lifetime costs); explain the idea of externalities.

• Explain the cost of illness approach—be able to cast a wide net (think of all possible costs), cast a narrower net (define what is attributable to smoking); explain the difference between prevalence-based and incidence-based approaches.

• Explain why costs would differ in different resource settings (understand that costs are more than monetary amounts).
Why Do We Care About the Costs of Tobacco Use?

Understanding the basics of tobacco control economics may be useful for a tobacco control practitioner.

Dr. Chaloupka discusses why we care about the costs of tobacco use.

We know that tobacco use can lead to death and disease as well as reduce a person’s ability to be productive and to work at their full potential. It’s possible to estimate the monetary value of the different harms resulting from tobacco use. Putting a monetary value on these harms is useful in many ways.

Why Do We Care About the Costs of Tobacco Use? (continued)

Learn how these data are important and can be used in many ways.

- Tobacco control advocacy: Vietnam loses more than ₫24.6 trillion (USD $1.08 billion) per year on tobacco, accounting for almost 0.97% of its Gross Domestic Product (GDP). The Vietnamese Ministry of Health used this finding on the occasion of the 2017 World No Tobacco Day to argue that anti-tobacco laws should be better enforced.

- Policymaking/public health: Decision makers are more likely to support policy measures if they see the actual or estimated costs imposed by tobacco use.
  “I do not think we as a community can ignore a problem that is costing this country $31.5 billion a year.” – Senator Alan Eggleston, Western Australia, 2011. Speech supporting plain packaging in Australia.

- Tobacco control programs: Tobacco control interventions use public resources—taxpayers have a right to know the benefits of these programs to evaluate their usefulness. Knowing what tobacco use costs helps evaluate what costs are saved when tobacco use is successfully reduced.

- Tobacco Industry accountability: In lawsuits brought against the tobacco industry, courts are often interested in putting a monetary value on the harms caused to victims.
**What Are the Costs of Tobacco Use?**

Dr. Chaloupka discusses the costs of tobacco use.

One way to think about the costs from tobacco use, is to value the resources used up when an economic activity happens. Buying and using tobacco products is an economic activity. More generally, consumption and production are economic activities.

Tobacco use, as we have seen, has clear, measurable harms to health. When thinking of costs, we ask whether it is possible to put a value on the harms from tobacco use. *Yes, it is possible.* There are a number of ways to think about the costs associated with using tobacco products.

**What Are the Costs of Tobacco Use to the Smoker/Tobacco Product User?**

Dr. Chaloupka discusses the costs of tobacco use to the smoker/tobacco product user.

The monetary cost of tobacco use is what a user spends on tobacco products. But there are other costs—in particular, the cost resulting from the illnesses caused by tobacco—that we will look at in more detail.

Learn about costs associated with using tobacco products.

**Example**

Buying a pack of cigarettes a day @ $10 a pack would cost a smoker USD $3,650 a year in the US. A bidi smoker in Delhi who buys and smokes 5 packs every week costing 20 rupees a pack spends 5,200 rupees a year, the equivalent of USD $80.

**What Is the Burden of Smoking on Immediate Family/Social Circle of the Smoker?**

The death of the main wage-earner can result in a family facing poverty and being forced to make difficult choices, even pulling children out of school.

Learn about immediate family/social circle costs associated with using tobacco products.
Example

The cost of treating cancer due to exposure to secondhand smoke—taking care of a family member with a tobacco-caused illness—costs money.

**What Is the Burden of Smoking on the Workforce?**

Dr. Chaloupka discusses the burden of smoking on the workforce.

Missing work due to chronic lung disease means losing income, especially in settings where workers are paid on a daily basis. Having an illness reduces workplace productivity, and can affect future career prospects and incomes.

Some of these costs are visible, while other costs take time to make themselves more apparent.

Learn about workforce costs associated with using tobacco products.

**Example**

Service staff in restaurants that allow smoking may discover they are less productive at their work several years after their exposure to secondhand smoke.

**What Are the Costs of Tobacco Use to the Environment?**

Dr. Chaloupka discuss the costs of tobacco use to the environment.

There are some environmental costs associated with tobacco use as well. Some are clear and visible: things like soot and tar build up in buildings where smoking is allowed.

Cigarette butts and litter from chewing tobacco wrappers do not biodegrade and build up in the environment over time.

**Who Bears the Costs of Tobacco Use?**

Dr. Chaloupka discusses who bears the costs of tobacco use.

So who pays for tobacco use? Is it just the user or are others paying part of the cost?
In reality, the cost due to tobacco use can be borne by the user or by others as detailed in the next few slides.

An infographic titled “The Harmful Chemicals in Secondhand Smoke” is shown. Four icons are shown and text.

The four icons include:

- lungs
- a heart with a heartbeat reading inside it
- an ear
- an asthma inhaler

Text below the icon images reads: Secondhand smoke and the harmful chemicals in it are known causes of Sudden Infant Death Syndrome, respiratory infections, ear infections, and asthma attacks in infants and children. They are also known causes of heart disease, stroke, and lung cancer in adult nonsmokers.

The infographic’s source is the US Centers for Disease Control and Prevention.

**Private/Internal Costs**

Dr. Chaloupka discusses private/internal costs of tobacco use.

The private costs of smoking are the costs to smokers—or to other tobacco product users—that they bear personally.
This includes the cost of cigarettes and other tobacco products purchased by the user, the higher risk of illness and death resulting from tobacco use, the personal cost of treating such illnesses when they arise, and the burden of reduced productivity and resulting income loss.

External Costs

Dr. Chaloupka discusses external costs of tobacco use.
The external costs of smoking are the costs that people other than the smokers bear. This includes the higher risk of illness and death from exposure to secondhand tobacco smoke, the cost of treating such illnesses when they arise, and the cost of cleaning up the litter from tobacco use.

**Quasi-External Costs**

The costs that fall in-between private and external costs, and are used to refer to the costs on the immediate household or family of a smoker, are what we refer to as quasi-external costs.

A smoker’s spouse is at a higher risk than, say, a non-smoking neighbor, of developing illnesses and dying earlier due to secondhand smoke. Households and families are different from the outside world. Bargaining and social norms might operate differently within the household. For instance, a spouse might be more accepting of a smoker in return for the security and benefits of being a member of a
family. But in other instances, the harms from smoking imposed on family members might be hard to avoid—children, in particular, have little say in whether their parents smoke or not.

Smoking is estimated to cost about US $1.4 trillion in economic damages each year.

**Societal Costs**

Adding up all the costs of smoking—private, external, and quasi-external costs—gives us the societal costs of smoking.

**Quiz**

Which cost is considered an internal cost, an external cost, or a quasi-external cost?

List each cost of tobacco use in its appropriate category:

- children have no say in parent smoking
- risk exposure to secondhand smoke
- purchasing other tobacco products
- reduced productivity and income loss
- dying earlier to secondhand smoke
- higher risk of illness and death
- purchasing cigarettes
- cleaning up litter
- costs on smoker’s family
- cost of treating illnesses when they arise

**Answer**

**Internal**

- purchasing cigarettes
- purchasing other tobacco products
- higher risk of illness and death
- reduced productivity and income loss
External

- risk exposure to secondhand smoke
- cleaning up litter
- cost of treating illnesses when they arise

Quasi-External

- costs on smoker’s family
- children have no say in parent smoking
- dying earlier to secondhand smoke

How Do We Measure These Costs in Practice?

Dr. Chaloupka discusses how we measure these costs in practice.

Some of the most identifiable costs of tobacco use come about due to the health burden of tobacco. The cost of illness approach identifies and measures all of the costs of a particular disease, including the direct, indirect, and intangible dimensions. The output—expressed in monetary terms—is an estimate of the total burden of a particular disease to society.

Learn more about the two ways in which these costs can be measured.

The Incidence-Based Approach

For a single user, these costs can be measured over an entire lifetime. This is known as the INCIDENCE-BASED approach.

The Prevalence-Based Approach

For a health system, these costs can be measured in a given year. This is known as the PREVALENCE-BASED approach.

The Prevalence-based Approach to Estimating the Costs of Tobacco-caused Illnesses

Dr. Chaloupka discusses using the prevalence-based approach to estimate the costs of tobacco-caused illnesses.
If you were asked what the cost of tobacco use in Vietnam in 2016 was, how would you go about estimating these costs? A simple way to approach the problem is to think of all of the diseases that are attributable to tobacco use, and then estimate the costs experienced by tobacco users facing those diseases in a given year.

**Key Insight**

A key insight of this approach is that the costs are not just the payments that patients make to their doctors. Costs tend to be spread wider than that. Going to a hospital costs time and money. Taking care of someone who is ill costs time and money. Employing a worker who is less productive because she has to see a doctor for a tobacco-caused illness costs time and money.

**Direct and Indirect Costs**

Dr. Chaloupka discusses direct and indirect costs.

Tobacco use related costs may be classified in terms of direct and indirect costs.

The direct costs are the monetary value of goods and services utilized as a result of tobacco use and tobacco-related illnesses.

The indirect costs of tobacco use are losses where money does not change hands, but there is still a loss in terms of resources.

Learn examples about direct and indirect costs of tobacco use.

**Direct Costs**

- Health care costs: Health care costs can include hospitalization, physician services, home health, medications, and costs of supplies and equipment.
- Non-health care costs: Non-health care costs can include transportation and caregiving by family.

**Indirect Costs**

- Indirect morbidity costs: Indirect morbidity costs are costs representing the value of lost productivity when individuals fall ill or are disabled from tobacco-caused diseases.
• Indirect mortality costs: Indirect mortality costs are the costs representing the value of lost productivity due to the fact that tobacco users tend to die earlier than their co-workers.

**Estimating the Costs of Tobacco Use in a Country: Step 1 and Step 2**

Here is an example of how a scientific group estimated the costs of tobacco use for Vietnam for the year 2011.

**Step 1**

**Identify Illnesses and Conditions Associated with Tobacco Use**

The study group focused on the biggest causes and conditions attributable to tobacco use: lung cancer, cancers of the upper aerodigestive tract (lip, tongue, gums, etc.), chronic obstructive pulmonary disease, ischemic heart disease, and stroke. These account for 75% of deaths due to smoking in Vietnam.

Note that there may be many diseases beyond the five listed conditions, but they do account for the major share of tobacco's harms in Vietnam.

**Step 2**

**Identify What Fraction of These Illnesses Are Attributable to Tobacco**

Not every case of lung cancer or heart disease is due to smoking. But for every 100 cases of lung cancer, we need to know how many are because of smoking and how many are because of other reasons.
Where data were not available for Vietnam, the study group took data from well-known research and, using information on the population and smoking patterns in Vietnam, estimated how much of each of the five diseases were caused by smoking.

**Estimating the Costs of Tobacco Use in a Country: Step 3**

**Step 3**

**Classify Costs in Various Categories**

**Direct Costs** consist of medical costs (service fees, overhead costs, drugs not included in the service fees) and non-medical costs (transportation, supplemental foods).

**Indirect Costs** include patients’ income losses due to sick leave and premature death, as well as income losses for family members providing patient care. Vietnam’s health system relies on a combination of private payments and government insurance.

Public health insurance is compulsory for all employees, and the costs are shared by the employer (two-thirds) and employee (one-third).

Private health insurance supplements public health insurance; it is profit driven and primarily used by wealthier individuals.

The cost of treating one episode of pulmonary distress, for example, will be spread across the individual and the government or health insurers.
Estimating the Costs of Tobacco Use in a Country: Vietnam Example

Learn about examples of direct and indirect costs of tobacco-related illnesses in Vietnam.

<table>
<thead>
<tr>
<th>Costs</th>
<th>Individual</th>
<th>Insurers</th>
<th>Government</th>
</tr>
</thead>
</table>
| Direct Costs  | • Payment of service fees to hospitals/service providers for outpatient visits and for inpatient stays  
• Patient's share of medical exams, lab work, and drugs  
• Non-medical costs include transportation to and from the hospital for the patient  
• Costs of supplemental food for the patient | • Insurer’s share of payments to hospitals/service providers for outpatient visits and for inpatient stays  
• Insurer’s share of medical exams, lab work, and drugs | • Government’s share of labor and hospital costs not covered by service fees. |
| Indirect Costs| • Patient’s income losses due to sick leave and premature death  
• Income losses for family members providing patient care | N/A                                                          | N/A                                                            |
Estimating the Costs of Tobacco Use in a Country: Step 4

Step 4

Get the Best Possible Estimates of Each of Those Costs Using the Best Available Data

To get at each of these costs, the Vietnam study group looked at existing data and where data were not available, conducted fresh surveys. Examples:

- Annual hospital records detailed the direct costs of running a hospital and treating a lung cancer patient.
- A government report on health statistics detailed the number of patient visits.
- A survey of over 3,000 patients in 13 hospitals across the country detailed the direct costs of fees, transportation, and supplemental foods paid by inpatients.
- A survey of patients and their caregivers detailed the costs borne by families.
- Estimates of days lost to illness and the income earned during those days detailed the indirect costs of productivity losses.

Estimating the Costs of Tobacco Use in a Country: Step 5

Step 5

Add Up the Costs, Do a Reality Check (Are the Numbers Reasonable?)

In 2011, here is what the Vietnam study group found:

- The direct costs of inpatient care were 9,896.2 billion VND (USD $470.4 million).
- The direct costs of outpatient care reached 2567.2 billion VND (USD $122.0 million).
- Of these direct costs of inpatient and outpatient care, the government bore 4,534.3 billion VND (USD $215.5 million), which was equivalent to 5.76% of its 2011 health care budget.
• The indirect costs (productivity loss) due to illnesses (morbidity) were 2,652.9 billion VND (USD $126.1 million).
• The indirect costs (productivity loss) due to tobacco-caused death (mortality) were 9,563.5 billion VND (USD $454.6 million).

Estimating the Costs of Tobacco Use in a Country: Step 6

Step 6

Two big findings emerged from the Vietnam study:

• Over 5% of the government’s spending in the health care system was due to smoking alone.
• Indirect costs represented about 49.5% of the total costs of smoking—smoking imposes a burden because it prevents employees from working at their maximum potential. This turned out to be a big cost for Vietnam.

Measuring Costs Across the World

Dr. Chaloupka discusses measuring costs across the world.

The cost of illness approach is one way to measure the health burden of smoking in monetary terms. As the example from Vietnam suggests, information on the diseases resulting from tobacco use, the patterns of tobacco use in a country, and the cost of treating the illnesses caused by tobacco can be combined to assess the health costs of tobacco use. Are the costs likely to be the same in all countries?

No. Even if smokers in any country have the same chance of developing an illness, the costs of illness will vary by country precisely because the patterns of tobacco use and the costs of treating illnesses will vary by country.

There are, of course, other costs from tobacco use (recall the discussion of private and external costs). We would expect these costs to also vary by country.

Self-test

Read each question. Then read the Answer to check your answer.
1. Spain and Thailand have cigarette markets of nearly the same size—49.8 billion sticks a year were sold in Spain in 2016, and 46.3 billion sticks in Thailand.

Let us assume that smokers in both countries have a similar tendency to discard cigarette butts. Is the cost of cleaning up cigarette litter in one square kilometer going to be the same in both countries? Why not?

Answer

The cost of cleaning up cigarette litter will be different in Spain and in Thailand, because the cost of labor is different (average wages in 2017 were about 13,000 Baht in Thailand, or about USD $400, while wages were over 2,500 Euro in Spain or about USD $2,951). The cost of technologies may also be different—a street cleaning machine costs much more than employing five workers with brooms.

2. Volunteers are vital to environmental programs worldwide. Coastal clean-ups, for example, are days when people volunteer to clean debris from beaches. Both Spain and Thailand have long coastlines. Say they both rely on volunteers on a single day to clean up the cigarette butt problem—essentially, the government spends nothing when people volunteer to clean up the environment. Does this make the cost of cleaning up cigarette butts equal in both countries? Equal to zero in both countries?

Answer

No. Even if we rely on volunteers to address the external costs of tobacco use, nothing is free. Volunteers give up their time which they could use to earn money, or do things they like (watching a soccer game, enjoying the beach). So the cost of cleaning up cigarette butts is not zero.

How do we value volunteers’ time? One way to do so is to look at the wage they would earn if they did not spend their time picking up cigarette butts from the sea. As we saw, the wages are very different in Spain and in Thailand, so the cost of volunteer services is also different.
Summary

Dr. Chaloupka summarizes the Cost of Tobacco Use Lecture.

Tobacco use imposes costs on users, their families and societies, ranging from the money paid to treat the illnesses caused by tobacco use, to the lost income due to illness and death, as well as the environmental damage caused by tobacco. Economics distinguishes between private costs and external costs depending on who bears the burden of those costs.

The cost of tobacco-caused illnesses is a major avoidable cost imposed by tobacco use. Estimating these costs requires knowing which diseases are attributable to tobacco use and how much individuals, their families, and health care systems spend diagnosing and treating those illnesses. Even if tobacco use leads to the same pattern of disease in different countries, the costs associated will be different because health systems are different.

Additional Resource

Tobacco Economics Concepts and Terminology

Access the Tobacco Economics Concepts and Terminology document. This document is a resource you can use to become familiar with the economics concepts and terms that may be unfamiliar to you.

Key Insights from the Economics of Tobacco Control

1. People respond to incentives in the market, in particular to price.

   *When tobacco prices rise, sales fall.*

   *When smokers find it too costly to smoke, they quit.*

2. Tobacco use imposes an economic burden. Tobacco control saves on many of these costs.

   *Costs of tobacco use are borne by the individual (the risk and the costs, and loss of income due to tobacco-related illnesses), their family, and society as a whole*
(reduced productivity, the effects of tobacco use on others health and well-being).

Economists quantify these costs to make the policy case for tobacco control.

3. On the demand side, consumers respond to prices and income.

Tobacco use falls when prices are higher and tends to rise with incomes. This response varies by age, gender, and by socio-economic differences—including education and cultural context.

4. On the supply side, profit-making guides pricing, marketing and supply decisions.

The supply side of tobacco includes tobacco farming, processing and marketing tobacco products. Big tobacco is a highly profitable industry.

Over time, it has also become a highly concentrated industry, with a few large firms dominating the market.

5. Governments have a key role to play in correcting problems in markets where consumers are either unaware of harms or find it hard to regulate their consumption.

Economists usually trust markets to work well to address what consumers want at the price they are willing to pay. But tobacco faces fundamental market failures, including the following:

- Tobacco users are unable to regulate their addiction.
- There is poor awareness of tobacco’s harms—especially among the youth.
- There are negative effects of smoking on others, including society as a whole.

All of these reasons are the basis for governments intervening strongly in tobacco.
6. Governments intervene in markets by regulating price (typically through taxes) or regulating quantities and characteristics of what is bought.

*Government intervention in taxation is an example of a “win-win.” Higher tobacco taxes reduce smoking and also bring in additional revenues.*

*Economists are often asked to quantify the benefits of such policy changes: How many more averted deaths and how much more revenue would doubling the tax on tobacco result in?*

7. Governments also face trade-offs in tobacco control. Economic tools put a number on these tradeoffs and the benefits of tobacco control.

*Will reducing tobacco use result in job losses? Will raising tobacco taxes lead to smuggling of cheaper tobacco products? Economists evaluate the evidence to put a number on the benefits of tobacco control.*

**Building Your Tobacco Control Economics Terminology**

**Insights or Jargon?**

As with any field, economics uses terminology and jargon that is specific to the field. While the language and methods of economics can be a barrier, a quick grasp of the insights most relevant to tobacco control is key.

Economics is often the language of public policy, and for making the business case for why tobacco control matters among several competing policy issues that governments face on any given day.

Equally important, when the tobacco industry emphasizes its economic relevance to a country, a good grasp of tobacco control economics counters falsehoods with facts.

**Breadth or Depth?**

**Tobacco Control** uses tools from different fields of economics. Breadth of knowledge, and knowing where to find answers to questions is often more useful than an in-depth understanding of these fields.
**Microeconomics**, including consumer theory, studies what drives individual and market demand: prices, incomes, what drives firms’ production and marketing decisions, how markets work, and how resources are allocated.

**Applied Microeconomics** applies these concepts to different fields relevant to tobacco control in the real world.

**Public Economics/Public Finance** studies the role of government in the economy, and the problems of inequality and redistribution.

**Health Economics** applies the tools of economics to health questions, such as the costs imposed by diseases resulting from tobacco use.

**Behavioral Economics** applies insights from psychology to understand human behaviors, in particular, deviations from what standard economics would predict.

**Regulatory Economics** formalizes the case for government intervention and the economic basis of laws.

**Development Economics** explains the barriers and processes unique to development in low- and middle-income countries (LMICs) where the majority of the world’s tobacco users live.

**Macroeconomics** understands and explains the functioning of the economy as a whole. Macro économists are asked about the level of output, employment, and inflation as an aggregate in the economy, and the impact of government policy changes on these in the short and long run.

Most applications of economics to tobacco control are from the field of microeconomics. But some of the skepticism from policymakers—will higher tobacco taxes cause inflation, will tobacco control lead to employment loss—can be answered by appealing to arguments from macroeconomics.

**Econometrics** applies statistics to quantify economic relations and evaluate policy much as epidemiology uses biostatistical tools. A key economic relationship of interest for tobacco control is how tobacco prices affect tobacco use and prevalence.
Demand for Tobacco Products

Introduction

Dr. Nigar Nargis, Director of Economic and Health Policy Research at the American Cancer Society, introduces the Demand for Tobacco Products Lecture.

If you were a tobacco company looking to sell your tobacco product in a new market, what factors do you think would persuade someone to buy your product?

Learning Objectives

- Identify how the insights from consumer demand apply to tobacco products.
- Distinguish how price affects demand: own price and the price of other products.
- Understand how non-price factors (income, tastes and preferences, knowledge, risk perception) affect demand.
- Explain and use the concept of price elasticity of demand; make a preliminary link to taxation.
- Analyze how government interventions affect the demand for tobacco products (raising price and regulating non-price determinants of demand).

Price, Income, and Other Factors Driving Demand

Dr. Nargis discusses the demand for tobacco products.

Tobacco users are individuals. They are also part of a larger group—the market. Understanding both the individual demand and market demand is important.

Learn about the different factors of tobacco product demand.

The Individual – what makes one person buy or not buy tobacco products and buy more or less of a product.
The Market – what makes whole groups of people buy a tobacco product.

**Tastes and Preferences**

Dr. Nargis discusses tastes and preferences.

Smokers and potential smokers’ tastes and preferences matter. Some of us would never think of smoking. Others might only like cigarettes with particular flavors. Still others might prefer chewed tobacco products to smoked tobacco.

For the most part, economists have little to say about how these preferences are formed. Preferences are often influenced by the groups and cultures we belong to, and preferences can change over time. But preferences are at the core of how tobacco users can be persuaded to purchase a product.

**Tastes and Preferences: Gutka**

Dr. Nargis discusses tastes and preferences: gutka.

As briefly mentioned in Module 1, gutka is a type of chewing tobacco combined with areca nut, slaked lime, and flavorings that was introduced in India a few decades ago. The product, typically packaged and marketed in small sachets, is highly addictive and leads to oral cancers. Areca nut, slaked lime, and flavored mouth fresheners are culturally acceptable in South Asia. They are also consumed without tobacco.

Between 2012 and 2013, responding to evidence on the harms of gutka, several states in India banned the product.
**Tastes and Preferences: Question**

Gutka is addictive.

**Question:** Would you expect a ban to result in an immediate stop to the sale of the product? How might sellers and buyers get around the ban? Why might they not resign themselves to chewing plain tobacco?

Learn about the gutka ban.

It is hard to stop consuming an addictive product. If product bans are not well enforced, sellers and consumers find a way to evade those bans. That is what researchers found in 2014 in India:

- Many sellers sold gutka openly.
- Former gutka users reported purchasing ingredients separately and combining/mixing their own.
- The cost of pre-packaged gutka increased following the bans.

**Consumers Tastes**

Dr. Nargis discusses consumer tastes.

Why might users have paid more or taken the time to combine tobacco and flavorings rather than switch to other forms of tobacco?

A possible reason is consumer tastes, which are often localized and culturally driven.

Learn more about how consumers are able to make their own gutka.

Gutka users who missed their favorite taste and tobacco hit could just combine the ingredients (flavorings, betel nuts, lime, and tobacco) and legally recreate their preferred flavor.

**Income**

Dr. Nargis discuss income.
Teenagers might love to experiment with cigarettes, but generally do not have a lot of disposable income of their own to buy a pack of expensive Marlboro cigarettes. The availability of cheaper brands makes it easier for them to go on with the experiment and gradually turn into a regular smoker.

A poorer smoker also has much less to spend on cigarettes than someone with a higher income.

With everything else held the same, lower incomes result in smokers buying fewer cigarettes and cheaper brands of cigarettes.

“Holding Everything Else Constant”

Dr. Nargis discusses “Holding Everything Else Constant.”

Poorer smokers tend to buy smaller quantities of tobacco products holding all else constant. But an important finding in many countries is that smoking is less prevalent in high-income groups. How do you explain this?

The assumption “holding everything else constant” is critical to a lot of the predictions about tobacco purchase behavior. Higher-income smokers tend to also be more educated and have a higher socioeconomic status (SES). More educated groups tend to smoke less. But as soon as we say this, we are not “holding everything else constant”.

So the statement “poorer smokers tend to smoke less” should be interpreted in the following ways. Learn about holding everything else constant.

**Education level** - for a given education level, poorer smokers tend to smoke less.

**Socioeconomic status** - for a given socioeconomic status, giving a smoker more income would tend to increase the demand for smoking.

**The Price of Tobacco Products**

Dr. Nargis discusses the price of tobacco products.
Tobacco is addictive, but it is rare that users will buy the same quantities of tobacco products no matter what the price. At the individual level, consider a cigarette smoker. When the price of cigarettes rises, he can either pay more to smoke the same number of cigarettes, or reduce cigarette consumption, or quit smoking.

Consider a cigarette smoker. When the price of cigarettes rises, we expect to see a reduction in the purchase of cigarettes.

**The Price of Tobacco Products (continued)**

Does everyone behave the same way when the price of a $5 pack goes up to $6? No. Learn the different ways smokers behave.

Many smokers will be unhappy with the higher price, but continue to buy the same number of cigarette packs as they did in the past.

Some smokers will quit; some will reduce the number of cigarettes they buy. And some potential smokers (who were considering beginning to smoke) will decide not to start.

Smokers may also change their behaviors in other ways:

- They may get more puffs/deeper puffs from each cigarette.
- They may switch to substitute products.

**Prices of Other Tobacco Products**

Dr. Nargis discusses prices of other tobacco products.

A cigarette smoker might be loyal to the brand he is used to. But what happens if another brand in the store has an irresistible “buy 2 packs for the price of 1” offer?

A snus user might not typically try moist tobacco. But what happens if the price of snus doubles tomorrow?

Learn how smokers decide to spend their money.

If the price of a smoker’s favorite brand of cigarettes doubles, while other, similar brands remain as cheap, they will tend to switch to the cheaper brands. Similarly, if
the price of a tobacco user's favorite product doubles, they will tend to switch to other, less expensive tobacco products.

Learn why smokers switch tobacco products.

Smokers may also switch to other tobacco products. Other products may be imperfect substitutes, but they are substitutes nonetheless.

**Prices of Other Tobacco Products: Substitution**

If a tax reform raises the prices of both cigarettes and roll your own (RYOs), would you expect to see substitution? Does it matter for public health?

**Answer**

Yes, we might still see substitution. What matters here is the relative price of cigarettes to RYOs. If cigarette prices double but RYO prices go up 50%, some cigarette smokers might switch over to RYO cigarettes since RYOs are cheaper.

Yes, this does matter for public health—smoking rates do not go down by as much if smokers switch to cheaper products.

**The Price of Other, Non-Tobacco Products**

Dr. Nargis discusses the price of other, non-tobacco products.

Cigarette use often goes together with other activities, such as alcohol use or eating out in restaurants. An increase in the price of alcohol might reduce the demand for alcohol, and therefore the demand for cigarettes smoked in social settings.

Learn about cigarette use with other activities.

**Example 1: Cigarettes and Alcohol**

Higher alcohol prices decrease both alcohol consumption and smoking participation. This suggests that raising prices of the products that are complementary to smoking can contribute to tobacco control as well.¹
Knowledge of the Harms from Smoking and Risk Perceptions

Knowledge and perception of the harms of addictive products affect demand. Learn about smoking and risk perceptions.

Knowledge - in some parts of the world, and among some population groups, knowledge of the harms of tobacco use is still low.

Information - better information about the dangers of tobacco reduces the demand for tobacco products.

Measurable - the impact of better information is often measurable.

Better Information

Dr. Nargis discusses better information.

When smokers are exposed to information about the harms of tobacco, there is a clear, measurable increase in the attempts to quit smoking.

For instance, there was an increase in calls to quitlines after an information campaign in Senegal. See the National Senegalese Quitline graph.

A National Senegalese Quitline graph depicts the number of calls the quitline received over a five-month period in 2013.
The x-axis is labeled with months. The y-axis is labeled with the number of calls. Increments on the y-axis are in 10. The increments start at 0 and go to 80.

Data for the months are approximately:

- February 2013: 29 calls peak
- March 2013: 10 calls peak
- April 2013: 60 calls peak
- May 2013: 49 calls peak
- June 2013: 62 calls peak

The graph is shaded from April 2013 to June 2013 designating the period when a mass media campaign took place.


**Demand for Tobacco: Like Other Products or Unique?**

Dr. Nargis discusses the demand for tobacco: like other products or unique.

In many ways, the demand for tobacco products is like the demand for other goods and services we buy—if prices fall, and/or incomes grow, demand for tobacco products typically increases.

This graph shows how prices and the consumption of cigarettes in Bangladesh varied over time. The most noticeable pattern was that in years when prices were high, demand was low, while in years when prices were lower, demand tended to be higher.
A graph titled: Inflation Adjusted Cigarette Prices and Per Capita Cigarette Consumption, Bangladesh, 1995-2010 is shown.

Two variables are compared: real price and per capita consumption.

The x-axis is labeled with years. The y-axis is labeled with the real price per pack of 20 (2010 Taka). Increments on the y-axis are in 5. The increments start at 48 and go to 88.

Real Price data points were approximately:

- 1997: 88
- 1999: 80
- 2001: 83
- 2003: 80
- 2005: 58
- 2007: 50
- 2009: 48

The line for the graph draws from upper left to lower right.

Per Capita Consumption data points were approximately:

- 1997: 68
• 1999: 65
• 2001: 48
• 2003: 55
• 2005: 58
• 2007: 70
• 2009: 83

The line for the graph draws from mid left down to $x$-axis and then to upper right.

Sources: *Euromonitor International*, 2011; *Economist Intelligence Unit*, 2011; World Bank, 2011; and author’s calculations.

**Demand for Tobacco: Like Other Products or Unique? (continued)**

Dr. Nargis explains that the demand for tobacco is like that for other products.

Let us revisit the graph we saw earlier depicting the relation between the price of cigarettes and the number of packs of cigarettes purchased in Bangladesh.

This is an example of a demand relation—a relation between the price of cigarettes and the number of packs of cigarettes purchased in Bangladesh. The straight line drawn through the points is what the relation between price and quantity looks like *on average.*
A scatter plot is titled: Relation between price and per capita cigarette consumption in Bangladesh, 1997-2010.

The $x$-axis is labeled with cigarettes purchased per capita. Increments on the $x$-axis are in 50. The increments start at 300 and go to 500. The $y$-axis is labeled with the real price of cigarettes in various years relative to 2010. Increments on the $y$-axis are in 10. The increments start at 0 and go to 100.

Cigarettes purchased per capita relative to real price data points were approximately:

- Point 1: 345, 82
- Point 2: 353, 85
- Point 3: 358, 69
- Point 4: 360, 79
- Point 5: 362, 59
- Point 6: 375, 55
- Point 7: 377, 85
- Point 8: 390, 81
- Point 9: 400, 86
- Point 10: 405, 88
- Point 11: 403, 51
- Point 12: 435, 52
- Point 13: 450, 50
- Point 14: 460, 54

The line for the graph draws from upper left to lower right.


**Demand Curves**

Dr. Nargis discusses demand curves.
Look now at a demand relation from a totally unrelated market—the market for sports tickets. The data points suggest that when tickets were priced higher, fewer sports fans attended games in stadiums.

Demand relations like these are a staple of economics. In that sense, the demand for tobacco is much like the demand for other products and services: when prices go up, demand goes down.

![The demand for baseball tickets in 2006](image)

A scatter plot is titled: The demand for baseball tickets in 2006.

The x-axis is labeled with average attendance. Increments on the x-axis are in 10,000. The increments start at 0 and go to 60,000. The y-axis is labeled with price per ticket. Increments on the y-axis are in 20. The increments start at 0 and go to 120.

Average attendance relative to price per ticket data points are approximately:

- Point 1: 15000, 110
- Point 2: 18000, 98
- Point 3: 18500, 90
- Point 4: 24000, 74
- Point 5: 25000, 75
- Point 6: 25500, 79
The fitted values line for the graph draws from upper left to lower right.

Notes: Data for the 30 largest baseball teams in the US measured by value (Forbes, 2007)

* Average attendance measured as the number of the average number of seats sold for a team’s game on its home field.
** Price per ticket computed as the average revenue per ticket


** Tobacco Demand **

But in other ways, the demand for tobacco is unique, in large part because of its addictive properties.

Learn about tobacco demand.

** First try ** - smokers rarely quit on the first try.

** Future harms ** - smokers often discount the future harms from smoking since they take several years to manifest.

** Overestimate ability ** - smokers often overestimate their ability to quit.

** Individual and Market Demand for Tobacco **

Dr. Nargis discusses the individual and market demand for tobacco.

The ** market demand ** for a given tobacco product is calculated by adding up the demand for the product at a given price across all users.

The ** market value ** is calculated as the weighted average price per pack sold in a year multiplied by the number of packs sold.

** Market demand ** is equal to demand for product plus given price.

** Market value ** is equal to number of packs sold times weighted average price per pack in a year.

** Understanding the Numbers **

Dr. Nargis discusses understanding the numbers.

Cigarette retail values in 2016 were USD $683.4 billion. In 2016, over 5.5 trillion cigarettes were sold to more than one billion smokers worldwide.
Question: How much did the average smoker spend in 2016? ($683 billion/1 billion = $683, or nearly USD $700 in 1 year). Is this a reasonable estimate for how much an average smoker spent in Tanzania in 2016?

Answer

No, the average is affected by the value of cigarettes sold in high-income countries and low-income countries (e.g., in the US, smokers who smoke a pack a day spend on average USD $2,201 a year).

A Segmented Market

Dr. Nargis discusses a segmented market.

Companies typically segment their markets, based on observations on the purchasing patterns and potential purchasing patterns of smokers.

One way of segmenting markets is by brand price points: low-priced brands, medium-priced brands, and premium brands.

Another way of segmenting markets is by user characteristics, such as age. Each user characteristic makes for potentially different market segments, marketing strategies, and pricing strategies. Select each image to learn about user characteristics.

Young - young users might smoke less but also experiment more.

Old - older smokers tend to be more loyal to their brand.

Children - children and adolescents prefer some flavors (bubblegum, fruit, etc.) instead of no flavor.

A Segmented Market: Question

Cigars are priced several times more than the average cigarette pack. Fancy cartons of cigarettes used as gifts in China can cost a lot more than the cheapest brand. A premium-priced brand sold for 45 RMB in 2016 (about USD $7). At the same time,
the cheapest brand in China sold for 2.5 RMB (USD 0.38, or 38 cents). What does this say about the markets for these products?

**Answer**

Some tobacco products have a connotation of quality, craftsmanship, prestige, and experience. Companies selling exclusive cigars in cigar lounges will face a smaller market size (few people can afford their products) but can also charge a premium price for the prestige associated with these products. Similarly, brands in China that connote prestige and quality are priced much higher.

**References**


**Price Elasticity of Demand and the Link to Taxation**

Dr. Nargis discusses price elasticity of demand and the link to taxation.

Of all the factors affecting the demand for tobacco products, price is of special interest, since increase in price is one of the most effective ways to reduce the demand for tobacco products.

**Price Elasticity of Demand**

Dr. Nargis discusses price elasticity of demand.

Beyond saying that higher prices reduce cigarette demand, it is useful to know by how much demand changes when price rises, holding everything else constant.

The price elasticity of demand is the term used to capture by how much a given change in price changes the quantity demanded, in other words, how responsive a consumer is to changes in price.

Learn more about the price elasticity of demand.

% change in quantity demanded divided by % change in price
The price elasticity of demand for cigarettes is the percentage change in the quantity of cigarettes consumed for a one percentage point change in the price of cigarettes.

Different studies have found the price elasticity of demand for cigarettes to be in the range of -0.2 to -0.6.

Inelastic Price Elasticity of Demand

Dr. Nargis discusses inelastic price elasticity of demand.

Elasticity is a measure of how sensitive demand is to changes in price. Demand is more or less elastic depending on whether smokers are more or less sensitive to price increases.

Any time we find price elasticity values in the range of -1 to 0, we term demand as “inelastic.” In other words, consumers are relatively insensitive to price changes.

For example, an estimate of the price elasticity of demand for cigarettes for India was -0.37. This suggests that if prices rose 10%, demand (the number of cigarettes purchased), would decrease by 10% x 0.37 = 3.7%. Similarly, if prices fell 5%, demand would increase by 5% x 0.37 = 1.85%.

Inelastic Price Elasticity of Demand (continued)

Dr. Nargis discusses inelastic price elasticity of demand.

The demand for cigarettes is typically inelastic. A 10% increase in price will reduce demand, but reduce demand by LESS than 10%. The demand for products that are addictive tends to be inelastic—when price rises, smokers feel the pinch of higher prices but are not able to reduce their smoking by as much, particularly if they are addicted and there are no alternatives to cigarettes.

Learn more with an example.

For example, a 2009 study suggested that bidis in India have a price elasticity of about -0.9, while cigarettes have an elasticity of -0.3. A 10% increase in the price of cigarettes in India tends to mean that cigarette smokers as a whole would buy 3%
fewer cigarettes. A 10% price increase in bidis, on the other hand, would result in a 9% reduction in bidis bought.

The demand for items that are either addictive (cigarettes), or that are necessities for daily living (salt, water, etc.,) tends to be inelastic since buyers are unable to find substitutes.

**Inelastic Price Elasticity of Demand: Exercise**

Consider a tax that raises cigarette prices by 20%. Older smokers (ages 30 and above) reduced purchases by 7%.

**Quiz**

1. Which of these could be the extent by which young smokers (ages 18–30) reduced their purchase of cigarettes?
   - 0%
   - 6%
   - 14%
   - 25%

**Answer**

14%: Young smokers are more sensitive to price increases, so that rules out options a. and b. At the same time, demand for cigarettes is usually inelastic, so that rules out option d, where demand falls by more than the price increase.

2. What is the elasticity of demand for adults in this example? For the younger age group?

**Answer**

Adults: \((-7\% / 20\% = -0.14\)\), Younger age group: \((-14\% / 20\% = -0.28\)\)

**Exercise: Using Economics to Describe Demand Side Tobacco Control Interventions**

Dr. Nargis discusses identifying price or non-price tobacco control interventions.
Consider each of the following tobacco control policies. Identify if they are price or non-price interventions. In doing so, use the language of economics to describe how these interventions work to reduce demand.

Think about each tobacco control policy. Is it a price intervention or non-price intervention?

1. Taxes on tobacco products

   **Answer**

   **Price intervention**: Taxes raise the price of cigarettes and induce some smokers to quit, and others to reduce the number of cigarettes smoked.

2. Restricting discounts on cigarettes

   **Answer**

   **Price intervention**: Discounting is a technique tobacco companies use to make cigarettes temporarily cheap, or to get around a price increase.

3. Prohibiting the sale of single stick cigarettes

   **Answer**

   **Non-price intervention**: It keeps single stick cigarettes away from children who can afford them easily.

4. Bans on smoking in workplaces and restaurants

   **Answer**

   **Non-price intervention**: It reduces demand by restricting the number of venues where smokers can use tobacco products.

5. Bans on advertisements

   **Answer**

   **Non-price intervention**: It reduces the attractiveness of tobacco products and their appeal to smokers, particularly to young smokers.

6. Bans on attractive flavorings
Answer

Non-price intervention: It reduces the attractiveness of tobacco products and their appeal to smokers, particularly to young smokers.

7. Warnings, including cigarette warning labels

Answer

Non-price intervention: It reminds smokers of the harms of smoking; warns potential smokers of the risks of smoking.

8. Mass media campaigns

Answer

Non-price intervention: It educates potential smokers and reduces demand.

9. Making cessation services available more freely

Answer

Non-price intervention: It increases the availability of alternatives to smoking.

Summary

Dr. Nargis summarizes the Demand for Tobacco Products Lecture.

An individual tobacco user’s demand for any tobacco product is influenced by the individual’s tastes and preferences, income and ability to pay, the price of the product, and the price of other products.

The impact of price on tobacco use is of particular interest in tobacco control. Even though tobacco products are highly addictive, when tobacco product prices increase, some tobacco users quit, others reduce use, and still other potential users refrain from trying out tobacco products for the first time. The price elasticity of demand is a fundamental concept in economics since it quantifies how much tobacco use falls when prices rise.
Supply of Tobacco Products

Introduction

Dr. Roberto Iglesias, Technical Officer, Prevention of Noncommunicable Diseases with the World Health Organization, introduces the Supply of Tobacco Products Lecture.

The supply side of tobacco consists of the people and entities who grow tobacco, manufacture, process, market and retail tobacco products, and those who develop new products.

A challenge for tobacco control is that this industry that causes a tremendous amount of death and disease is immensely profitable and provides many workers with their livelihood.

Learning Objectives

- Understand the economics of the supply side of tobacco and tobacco products: agriculture, manufacturing, and industrial organization.
- Learn about tobacco farming: tobacco is a profitable cash crop and, in most cases, very labor intensive.
- Understand tobacco manufacturing: the production of cigarettes is highly mechanized. Other tobacco products are more labor intensive to produce (bidis and hand-rolled kreteks).
- Gain a perspective on industrial organization: tobacco is a global industry that is highly concentrated in most countries (a few large companies dominate the market). Government intervention on the supply side can run contrary to public health—some governments have an active stake in the tobacco industry, particularly producing and regulating the sales of tobacco products—other governments provide subsidies and preferential treatment to an already profitable industry, particularly to leaf producers.
Modern Tobacco Manufacturing and Farming

Dr. Iglesias discusses modern tobacco manufacturing and farming.

In any industry, manufacturers look to profit by sourcing raw materials in cost-effective ways, and by developing new products.

Modern manufacturing techniques increase the efficiency along the supply chain from the tobacco fields to the smoker.

Modern Tobacco Managers and Shareholders

Dr. Iglesias discusses modern tobacco managers and shareholders.

Managers and shareholders hold tobacco companies accountable for cutting down costs, ensuring a consistent product, innovating new products, and expanding the market. Failing to do so can lead manufacturers and their businesses to fail. So tobacco companies continuously evolve to protect their own interests.

Modern Tobacco Farming

Dr. Iglesias discusses modern tobacco farming.

Modern farming and manufacturing also requires a large investment of resources to produce tobacco at a large scale. Larger companies have the resources to make these large investments to preserve their markets and gain new customers. But large investments are also a barrier to small farmers and small manufacturers.

Agriculture: Tobacco Farming

Tobacco leaf is a cash crop. Tobacco is mostly grown and processed for its commercial value rather than for farmers’ own use.

Over 120 countries grow some amount of tobacco. China, India, Brazil, the US, Indonesia, Zimbabwe, and Zambia were the largest producers in 2016.
An infographic titled “Global Tobacco Production by Country (2016) – Top 7 Countries” is shown. The top 7 tobacco producing countries are displayed in the infographic.

Countries are represented by rectangles. Each rectangle is sized according to the tobacco production of each country. Tobacco leaf production is measured in thousands of tons. Each country's measurement of tobacco leaf production is listed as follows:

- China: 2,805K
- India: 761K
- Brazil: 675K
- USA: 285K
- Indonesia: 196K
- Zimbabwe: 172K
- Zambia: 124K

The infographic's source is the Food and Agriculture Organization of the United Nations.

**Agriculture: Upper-Middle and High-Income Countries**

Dr. Iglesias discusses agriculture in upper-middle and high-income countries.
During the past 20 years, production of tobacco leaf in developed countries decreased by more than one-third, whereas in developing countries it increased by two-thirds.

In other words, the global production of tobacco leaf has shifted to low- and middle-income countries. Twenty-five percent of tobacco grown globally is exported rather than used within the growing country.

Over 40% of the world’s tobacco is grown in China.

**Agriculture: Upper-Middle and High-Income Countries (continued)**

Dr. Iglesias discusses the farming of tobacco leaf.

Interestingly, the farming of tobacco leaf accounts for less than 1% of the value of the global agricultural sector (which includes all crops).

In a few additional countries, allied agricultural and forestry industries supply products used in tobacco production (e.g., clove farming in Indonesia, collecting tendu leaves—a forestry product used in rolling bidis—in India).

**How Tobacco Farming Is Organized**

Dr. Iglesias discusses how tobacco farming is organized.

In some parts of the world, tobacco farms are small, one family operations, often combined with other crops. In other places, tobacco farms are large, specialized, and mechanized.

**How Tobacco Farming Is Organized (continued)**

Dr. Iglesias discusses how tobacco farming is organized.

Modern commercial farming often involves close relationships between growers and the manufacturers who buy their products. This is also true of tobacco farming, which involves committing time and resources, sometimes beyond the capacity of a small farmer. Wherever the climate and geography allow it, larger farmers are better suited than small farmers to invest in technology and bear the risk. And
where small farmers continue, close networks with the tobacco manufacturers might make small farmers resistant to planting other crops.

**Tobacco Buyers**

Dr. Iglesias discusses tobacco buyers.

Tobacco buyers often provide farmers with resources and capital (equipment and funds) to improve the quality of the output. In return, they offer access to markets and technology for the farmer. Being sure of getting a good price or of having a buyer are important for farmers who like to reduce the risks they bear in growing and tending to their crop.

Learn how tobacco buyers and farmers interact.

- **Tobacco companies:** The tobacco companies that buy the leaf that farmers grow often provide assistance to ensure the quality of the crop. These close ties make farmers an important political ally of the industry in many countries, and ensure the farmers are indebted to the tobacco company.

- **Government entities/tobacco boards:** Tobacco boards that regulate the wholesale sale and purchase of tobacco leaf in many countries are in the public sector. Similarly, agricultural extension and improving crop productivity are functions that government bodies do in many places. Tobacco boards pose a challenge—while they are mandated to provide technical expertise and guarantee a market for farmers, they can be used by leaf processors and tobacco companies to protect their interests and advocate against tobacco control.

- **State ownership/lobbying pressure:** Governments may have a much larger stake in farming if they actually own farming and leaf-processing operations. Even if there is no state ownership on lands, in any place that there is a significant leaf production, cigarette companies exercise a lobby pressure for their own benefit or, alternatively, help organize farmers to push in favor of tobacco leaf production, tobacco farming livelihood and against tobacco control policies.
• Price support: Price supports are a feature of farming in many countries. In the case of tobacco, governments may commit to purchase tobacco leaf at prices based on tobacco leaf grades. India, for example, has a minimum support price for flue-cured Virginia tobacco (a curing method that produces tobacco high in sugar with medium to high levels of nicotine) a type of processed tobacco used in cigarettes.

• Taxes on tobacco leaf: In some countries—such as China, Indonesia, and Vietnam—local governments rely on tobacco leaf as an important source of local tax revenue. This means that the larger the size of the crop, the more tax revenue governments receive.

Tobacco Buyers (continued)

All of this means that even if tobacco is a small share of global agricultural output, tobacco farmers can have a large influence in policy discussions and farmers can feel threatened by tobacco control efforts.

Learn what these tobacco farmers are protesting.

In this image, the tobacco industry has organized tobacco farmers to protest tobacco control measures in Indonesia. Farmers worry FCTC restrictions would cause the demise of world tobacco farming, endangering their livelihood.
Exercise: Tobacco Farmers—Facing Risks but Resisting Change?

Workers are exposed to risks like pesticide poisoning, green tobacco sickness, and lung damage (asthma) from exposure to tobacco curing and field dust. Despite the documented hazards of farming, why might farmers be resistant to protecting themselves? Why do farmers not switch to other crops?

Answer

Farmers might not be able to protect themselves from the health risks of tobacco due to many reasons.

- Lack of information: Farmers might not know the risks they face.
- Lack of resources: Poorer farmers may not be able to protect themselves.
- Lack of workplace protections: Workers may risk losing their jobs if they complain about the harms. Women and children, who are typically paid less, might have even less power to bargain for their rights to a safe working environment in farms.
- An actual lack of alternatives: Farmers might not have other equally profitable alternative crops to grow in place of tobacco.
- A perceived lack of alternatives: Farmers might have other profitable crops, but the lack of a support system might make it a challenge to move out of tobacco.

Cigarette Manufacture and Marketing

Dr. Iglesias discusses cigarette manufacture and marketing.

In 2016, five trillion cigarettes were manufactured around the world. What all goes into manufacturing and marketing this successful product?

Learn about cigarette manufacturing and marketing.

- Production is a technical operation. Cigarettes are standardized products, made in efficient, highly-mechanized operations in most of the world.
• Skilled labor is an important resource that is specific to the industry—specialized tasks like blending tobacco leaves for consistent flavor, or designing the equipment that incorporates a flavor capsule in a cigarette are specialized activities.
• Less skilled labor performs other tasks like loading and moving finished products—they may require some but not extensive training.
• Research and development of new products are vital for companies to gain and maintain an edge over their rivals.
• Marketing and advertising are important costs in expanding the market share and attracting new users.
• Sponsorship by the tobacco industry encourages people across the globe to use tobacco products. This can include sponsoring any event, activity, organization or individual with the aim of promoting a tobacco product, brand, or tobacco use either directly or indirectly. Some sponsorship examples include concerts, sporting events, arts awards, and even schools.

Marketing and Loyalty

Dr. Iglesias discusses marketing and loyalty.

Marketing is very important to attract and retain loyal smokers. Marketing strategies are designed to retain existing customers, to take away share from other producers, or build new markets.

Marketing cigarettes is a big business—companies spend large budgets and creative effort to attract and retain smokers.

Learn more about tobacco marketing and loyalty.

Advertising - When one form of tobacco advertising or promotion is restricted, companies spend their budget and marketing expertise on other forms of advertising and promotion to maintain visibility for their products.

Promotion - Tobacco company promotional activities can take other forms, including sponsoring events and social activities—particularly around sporting
events. Spending on everything from team uniforms to sporting venues can be very costly, but also a very effective way of being visible.

**Visibility** - The most visible form of marketing is advertising in different media channels, including television, film, the Internet, magazines, billboards, and retail stores.

**Discounts** - A less visible but very effective type of marketing spending is discounts on cigarette products. This is a particular problem where advertising restrictions have led companies to rely on offering price discounts on cigarettes. Discounts reduce the price of tobacco products and thereby reduce the effectiveness of tobacco taxes.

**Quiz**

Which of these activities is something a tobacco company would NOT do to create brand marketing and loyalty?

- advertising
- promotion
- discontinue products
- discounts

**Answer**

Discontinue products: Tobacco companies strive to maintain visibility for their products. When one form of tobacco advertising or promotion is restricted, companies spend their budget and marketing expertise on other forms of advertising and promotion.

**Global Cigarette Production by the Numbers**

Dr. Iglesias discusses global cigarette production by the numbers.

Over 5.5 trillion cigarettes sticks were produced in 2016 globally, or over 750 million packs every day. Let’s take a closer look at the numbers.
There have been changes in the top 10 markets (comparing data for 2002 and 2016).

**Countries ranked by number of cigarettes sold**

<table>
<thead>
<tr>
<th>2002</th>
<th>2016</th>
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<tbody>
<tr>
<td>China</td>
<td>China</td>
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<td>USA</td>
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<td>Italy</td>
<td>Philippines</td>
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<td>Brazil</td>
<td>Germany</td>
</tr>
</tbody>
</table>

Source: *Euromonitor, 2017*

**Global Cigarette Production by the Numbers (continued)**

Learn more about cigarette production by the numbers.

**Egypt, India, and Philippines**

*Egypt, India and the Philippines* are among the ten countries that sell the highest number of cigarettes, while Spain, Italy and Brazil no longer make this top 10 list as of 2016. This reflects both declining cigarette consumption in upper-middle and high income countries (and indeed, in some low- and middle-income countries like Brazil), and the fact that low- and middle-income countries have larger populations.

**India**
Though India is the second largest country in the world, it ranked 8th in cigarettes sold in 2016. Bidi sales are not reflected in these data.

**Number of Cigarettes Sold**

The number of cigarettes sold worldwide peaked in 2012 and has been declining since then.

A line graph titled “Cigarettes sold in the world, total number of sticks” is shown. The $x$-axis is labeled with years. The first year is 2002 and the last is 2016; each year in-between is labeled. The $y$-axis is labeled billions of sticks. The first value on the $y$-axis is 5000 (5 trillion). The last value is 6200 (6.2 trillion). Increments are labeled every 200 billion.

The $(x, y)$ coordinates in this graph include:

The shape of the graph moves from lower left to upper right from 2002 to 2012. From 2013 to 2016 the shape of the graph moves from upper left to lower right.

The infographic’s source is the Euromonitor, 2017.

**Number of Cigarettes Sold (continued)**

Learn more about global cigarette production.

**Six Tobacco Companies**

USD $44.1 billion of profit was generated by the top six tobacco companies in 2013, equivalent to the combined profits of the Coca-Cola Company, Walt Disney, General Mills, FedEx, AT&T, Google, McDonald’s, and Starbucks in the same year.

**Traditional Tobacco Products**

More traditional tobacco products tend to be more labor-intensive, that is, they use labor effort rather than sophisticated machinery. Rolled bidis, kretexs, or cigars are examples of tobacco products that are more labor-intensive.

**Manufacture Has Consolidated**

Globally, manufacture has consolidated—instead of having many manufacturing facilities, one in each country, factories are often located in one country serving an entire region.

- Some types of consolidation happen when companies decide it is more efficient to produce in a single factory rather than many small factories. This has happened in Europe.
- In other cases, a large company may acquire another business to add brands or product lines and gain market share—In 2017, BAT (British American Tobacco, plc) acquired Reynolds America Inc.

**Exercise: Brief Article on Closure of Cigarette Factory**

Read an article on the closure of a cigarette factory to answer the following questions. This article is provided verbatim.
BAT to Cut 950 jobs at German Cigarette Factory to Reduce Costs

British American Tobacco Plc, the maker of Lucky Strike cigarettes, is eliminating 950 jobs at a German factory as it moves to cut costs amid a decline in smoking in western Europe.

The staff reductions at the 1,320-worker factory in the Bavarian town of Bayreuth will be implemented over two years, the London-based tobacco company said in a statement Thursday. Cigarette production will be shifted to BAT’s other European plants, though the factory will continue to make fine-cut tobacco, it said.

“A challenging economic environment coupled with over-regulation and excessive excise increases in some countries has led to a decline in legitimate volumes,” BAT Germany said in the statement.

BAT has whittled its total employee count down to about 87,000 at the end of 2015 from about 140,000 in 2001 as higher tobacco taxes and public smoking bans dent cigarette consumption. In the last ten years, the smoking rate in western Europe has declined by 3.6 percentage points to 23 percent, according to data tracker Euromonitor. In March, BAT announced it was closing a factory in Malaysia due to the rising costs of cigarette production.

BAT, the world’s third-biggest listed tobacco company, has a 19 percent share of the German tobacco market. Roll-your-own cigarettes have become popular in Germany as consumers have sought lower-tax alternatives.


Questions

1. How many employees were laid off? Did the factory shut down completely?
2. What were possible reasons for relocating a factory?
3. The article talks about reducing consumption as a reason for downsizing. Does this mean profits would have fallen?
Answer

1. A total of 950 workers laid off. The factory did not fully shut down. Production of fine-cut tobacco continued in Germany, while other production was relocated to other parts of Europe.
2. Cheaper labor costs in other countries in Europe was a reason given.
3. No. A company’s profits are what are left over from revenues after deducting costs, and are driven by many factors even though the number of cigarettes sold are one of the most important. BAT sold fewer cigarettes, but if the price it charged was higher, or if it got better at cutting costs (for example by cutting jobs), profits might very well increase. In fact, globally, BAT’s profit in 2016 was 13% higher than its profit in 2015, while the number of cigarettes it sold was 0.8% lower.

Industrial Organization and Market Power in the Global Tobacco market

Dr. Iglesias discusses industrial organization and market power.

Globally, a few large tobacco companies dominate the market for cigarettes. Cigarettes are an industry with a high “market concentration.” That is, in most countries, two or three companies have a very large share of the market.

Tobacco companies compete with each other within countries and with brands. Companies compete on price and on the attributes of the products they sell.
A pie graph titled “Tobacco Company Shares of Global Cigarette Market, 2016” is shown. The pie is divided into 6 sections. The six sections represent the percentage of tobacco company shares of the total global cigarette market in 2016.

The six sections include:

- China National Tobacco Company (CNTC): 42%
- Philip Morris International (PMI): 14%
- British American Tobacco (BAT): 11%
- Japan Tobacco (JT): 8%
- Imperial: 4%
- Other: 20%

The pie graph’s source is *Euromonitor International, 2017*.

**Privatization and Foreign Investment**

Dr. Iglesias discusses privatization and foreign investment.

Privatization of government-owned industries is a global phenomenon. In the tobacco industry, since the 1990s, privatization has meant new foreign investment. Foreign investment can take two forms—multinationals may invest in existing companies, or may set up new companies.
In many parts of the world, national monopolies in tobacco have been replaced by big multinational companies. One review found that this trend in places like the former Soviet Union and Turkey resulted in "...major increases in marketing (some specifically targeted at groups with previously low smoking rates), improved distribution, and lower taxes/prices and was associated with increased consumption of cigarettes."

Privatization and Foreign Investment (continued)

Learn more about privatization and foreign investment.

Local companies - the purchase or association of local companies with foreign companies could facilitate the political will of legislators or national governments to strengthen tobacco control policies and taxation, because the action of traditional local lobbies upon legislators is diminished or weakened.

Sin Tax Reform 2012 Philippines - the joint venture of Philip Morris International with Fortune Tobacco Company in the Philippines is an example of the purchase or association of a locally-owned company with a foreign company. The Sin Tax reform of 2012 in Philippines was facilitated by the perception that the main player was not Fortune but Philip Morris International.

National Companies and Government Participation

Dr. Iglesias discusses national companies and government participation.

Nationalized tobacco monopolies persist in some countries—like China, Vietnam, and Thailand. In 2011, 40% of the global cigarette production occurred in national monopolies.

China’s national tobacco company is the largest producer of cigarettes in the world. In many other countries, national monopolies have not always been able to keep up with the competition from multinational companies and international brands. Large multinationals also have a larger lobbying budget. Faced with competition, national monopolies might try to advocate for lower taxes on products they produce to ensure their products benefit.
National Companies and Government Participation (continued)

Dr. Iglesias discusses national companies and government participation.

National companies may also adapt to competition by entering into partnership with the multinationals to license and produce their brands, using their own production capacity and labor, but the know-how of the multinational company.

Learn about an example of a national tobacco monopoly in Vietnam.

In Vietnam, for example, the state-owned company is part of the country’s development strategy and over time partnered with international companies.

In 1989, an agreement between Vietnam’s Vinataba and the BAT subsidiary, Singapore Tobacco Company (STC) paved the way for improving leaf production within Vietnam.

In 1994, BAT licensed Vinataba to produce its brand State Express 555. Philip Morris licensed the production of Marlboro.

Production of Non-combustible Tobacco Products

Dr. Iglesias discusses the production of non-combustible tobacco products.

Other forms of tobacco, with smaller markets, tend to be less concentrated.

This means there are many more companies producing and competing for users (e.g., the bidi and chewing tobacco market in India).
Exercise: A Global Industry Battles Global Tobacco Control

Read an article concerning Philip Morris’s lawsuit in Uruguay. This article is provided verbatim.

Philip Morris Loses Tough-on-Tobacco Lawsuit in Uruguay

MONTEVIDEO (Reuters) - The World Bank's International Centre for Settlement of Investment Disputes (ICSID) ruled in favor of Uruguay on Friday in a suit filed by Philip Morris International seeking compensation for economic damages caused by the nation’s anti-tobacco measures.

Uruguay imposed a ban on smoking in public spaces in 2006, as it raised taxes on tobacco products and forced firms to include large warnings and graphic images including diseased lungs and rotting teeth on cigarette packages. It also banned the use of the words “light” and “mild” from cigarette packs to try to dispel smokers’ misguided beliefs that the products are safer.

“The health measures we implemented for controlling tobacco usage and for protecting the health of our people have been expressly recognized as legitimate
and also adopted as part of the sovereign power of our republic,” Uruguayan President Tabare Vazquez said in a televised speech.

Vazquez, an oncologist, helped spearhead the measures during his first term in office from 2005 to 2010.

In a lengthy decision published on Friday, the ICSID said it had ruled to dismiss Philip Morris’ demand that the regulations be withdrawn, or not applied to the company, or that it be paid $22 million in damages instead.

It ordered the tobacco company to pay Uruguay $7 million and to cover “all the fees and expenses of the Tribunal and ICSID’s administrative fees and expenses.”

Phillip Morris said it respected the tribunal’s decision.

“We’ve never questioned Uruguay’s authority to protect public health, and this case wasn’t about broad issues of tobacco policy,” Marc Firestone, Philip Morris International senior vice president and general counsel, said in a statement.

“The arbitration concerned an important, but unusual, set of facts that called for clarification under international law,” added Firestone.

The tobacco company said that it would like to meet with Uruguay’s government, to explore regulatory frameworks that would enable smokers “in the country to have informed access to reduced-risk alternatives to smoking.”

Action on Smoking and Health (ASH), the oldest anti-tobacco organization in the United States, applauded Uruguay for winning the case, but said Phillip Morris “accomplished its primary goal.”

Phillip Morris “will no doubt shed some public crocodile tears, but their main goal in launching the suit has been realized, six years and millions of dollars have been spent defending a nondiscriminatory law that was intended purely to protect public health,” said Laurent Huber, executive director for ASH.

“This has already resulted in regulatory chill in other countries, preventing tobacco legislation that would have saved lives,” Huber said.
Article Questions

1. Use arguments from economics for why an international firm might pick a small country like Uruguay rather than one of its larger markets to file such a lawsuit.

2. Would it have been to PMI’s competitor (British American Tobacco’s) benefit to join this lawsuit and seek compensation from Uruguay?

Answer

1. Like any business decision, a company weighs the risks and the costs of a lawsuit against the benefits. The benefits of winning a case for Philip Morris would have been beyond the USD $25 million it hoped to get Uruguay to pay. These include the following:
   - It would have set a legal precedent for other markets where the company operates.
   - It would have created a “chilling effect,” or a warning to other countries to not undertake tobacco control efforts.

For a legal case of this sort, the costs of filing the case tend to be lower, and the possibility of winning higher, in smaller jurisdiction which lack the resources to mount a strong legal defense.

2. A competitor like BAT could have benefited regardless. if the verdict of PMI vs Uruguay was in favor of PMI. Like Philip Morris, BAT has well-recognized brands that would have benefitted if a judgment favored the claim of intellectual property over public health. But even if it had the option, BAT may not have wanted to join the lawsuit to avoid the costs and risks that PMI bore in the case.

Government Intervention on the Supply Side

Exercise: Subsidizing Tobacco Farming
Under the World Trade Organization (WTO), governments are not allowed to subsidize tobacco farming and have to withdraw some of the traditional types of support like loans to exporters and tax benefits.

1. Develop arguments for why withdrawal of such subsidies are a good step.
2. Identify the stakeholders in a country from an international development perspective regarding a decision to reduce subsidies in tobacco farming. Who are the winners and losers?
3. What strategies can governments use to help those affected?

**Answer**

1. This is a good step since subsidies prop up what might be an unprofitable/inefficient use of resources.
2. When resources like land that was used for tobacco farming is diverted to other uses, non-tobacco agricultural productivity wins. But some farming households may receive less income, making them lose out. One fact to note is that tobacco farming is only a modest source of income in many countries. Therefore, the reduction in tobacco subsidies would have a minimum effect on household income in many countries. Farmers facing a declining market might voluntarily find other alternatives.
3. Governments might need to help the affected by assisting farmers to transition to different cash crops. Pilot programs in China, for example, found that with the right guidance, farmers could increase their incomes every year by 20–110% with alternative crops.

**Summary**

Dr. Iglesias summarizes the Supply of Tobacco Products Lecture.

The supply side of tobacco consists of the people and entities who grow tobacco leaf, manufacture, process, market and retail tobacco products, and those who develop new products. During the past 20 years, the global production of tobacco leaf has shifted to low- and middle-income countries.
Over 5.5 trillion cigarettes were produced in 2016 globally, with more than 40% produced in China alone. A few large, powerful companies dominate the market for cigarettes, while markets for other tobacco products tend to have many smaller companies.

Emerging Issues

Introduction

Dr. Rong Zheng, Professor from the University of International Business and Economics in Beijing, China and Director of the WHO’s Collaborating Center for Tobacco and Economics, introduces the Emerging Issues Lecture.

Much of the initial understanding about tobacco taxes was based on upper-middle and high-income countries. With more data and wider research efforts, more is known about tobacco taxation globally.

Policymakers often ask the question: “Is there evidence from my country/region that taxes work?” As it happens, researchers and public health advocates have been producing some important evidence from across the world. Being familiar with recent progress and challenges in taxation—and being able to assemble the most compelling evidence—is an excellent skill to add for tobacco control leadership.

Learning Objectives

- Understand the evolution of evidence on economics of tobacco control.
- Recognize the increasing importance given to tobacco taxes in the international development space as a key measure to reduce deaths from non-communicable diseases and as a stream of needed funds for development.
- Be able to identify resources to stay current on developments in the economics of tobacco.

New Evidence on Economics of Tobacco
Learn more about new evidence on the economics of tobacco.

**Elasticity of Tobacco Demand**

Explore more estimates of the elasticity of tobacco demand (refer to the "Price Elasticity of Demand and the Link to Taxation Lesson" in the second lecture of this module).

- Analyses in country after country have demonstrated that tobacco price increases reduce demand.
- In upper-middle and high-income countries, the price elasticity tends to be around -0.4, with estimates in the range of -0.2 and -0.6.
- In low- and middle-income countries, elasticity is in the range of -0.2 to -0.8, centering around -0.5.

**Economics of Tobacco Use**

Develop a clearer understanding of the economic costs of tobacco use.

With better data on the scale of the tobacco epidemic, and better measures of the costs in countries, there are better estimates of the global economic burden of tobacco.

A 2017 study, for example, finds that nearly 6% of global health care expenditures are attributable to tobacco use.

**Global Economic Cost of Smoking-Attributable Diseases**

*Source: Goodchild M, Nargis N, Tursan d'Espaignet E. Global economic cost of smoking-attributable diseases. Tobacco Control Published Online First: 30 January 2017, doi: 10.1136/tobaccocontrol-2016-053305*
An infographic titled “It Also Comes with Enormous Economic Costs” is shown. A circle is divided into 3 sections representing the economic health care costs for the world in 2012 due to tobacco use. All costs are in US dollars:

- $657 billion: indirect costs of mortalities caused by smoking; includes malignant neoplasms, cardiovascular diseases, respiratory diseases, lower respiratory infections, and tuberculosis
- $422 billion: health care expenditure due to smoking-attributable diseases
- $357 billion: indirect cost of morbidities caused by smoking

This is a total cost of $1.4 trillion. This total cost is 5.7% percent of total health care expenditure worldwide. This total cost is equivalent to 1.8% of the world gross domestic product (GDP). Forty percent of the total economic costs are incurred in low- and middle-income countries (LMICs).

The infographic’s source is Goodchild M, Nargis N, Tursan d’Espaignet E. Global economic costs of smoking-attributable diseases. *Tobacco Control.*

Published Online First: 30 January 2017. Doi: 10.1136/tobaccocontrol-2016-053305
Cost-Effective Differences

See recent efforts to quantify the cost-effective differences in tobacco control policies.

- Economists are called on to compare different health interventions, including tobacco control policies. When faced with many interventions, one intuitive way to compare them is to see how much it costs to save a life. A similar type of comparison is to see what it costs the system to gain one additional year of healthy life.

- A 2016 computing exercise, for example, established that raising taxes cost the least among tobacco control policies to secure an additional year of healthy life in any part of the world (high-, middle-, or low-income countries). By contrast, brief cessation interventions can be very costly to implement as a population-wide intervention.

- Notice that the costs of interventions are typically higher in upper-middle and high-income countries. Whether running a tobacco control advertising campaign or ensuring that all jurisdictions are smoke-free, labor (such as technical assistance and enforcement efforts) and other costs tend to be higher in upper-middle and high-income countries.


Source: Based on calculations from World Health Organization CHOICE model, 2016.
A bar graph titled “Tobacco Control Policies and Cost Per Health Life-Year Gained, by Country Income Group” is shown.

Four different country income classifications are being measured in each policy group. The variable $n$ stands for sample size. The different country income classifications are:

- Low-income ($n=30$)
- Lower middle-income ($n=39$)
- Upper middle-income ($n=45$)
- High-income ($n=46$)

The x-axis is labeled with the following tobacco control policies:

- Brief intervention
- Smoke-free protection
- Warning labels
- Advertising ban
- Raise taxes
The $y$-axis is labeled Cost per HLYG (International $). HLYG stands for Healthy Life-Year Gained. Country income group classification based on World Back Analytical Classifications for 2014. The $y$-axis monetary values are 0, 200, 350, a break, then 900, 1000, a break, then 4100, 4200, and 4300.

Estimated values for Brief intervention tobacco control policy:

- Low-income: $80
- Lower middle-income: $300
- Upper middle-income: $950
- High-income: $4,200

Estimated values for Smoke-free protection tobacco control policy:

- Low-income: $10
- Lower middle-income: $50
- Upper middle-income: $70
- High-income: $200

Estimated values for Warning labels tobacco control policy:

- Low-income: $7
- Lower middle-income: $20
- Upper middle-income: $50
- High-income: $100

Estimated values for Advertising ban tobacco control policy:

- Low-income: $3.50
- Lower middle-income: $10
- Upper middle-income: $20
- High-income: $45

Estimated values for Raise taxes tobacco control policy:

- Low-income: $1
- Lower middle-income: $0.50
Tobacco Taxation and International Development

Price and tax measures on tobacco can be an effective and important means to reduce tobacco consumption and health-care costs, and represent a revenue stream for financing development in many countries.

Dr. Zheng discusses tobacco taxation and international development.

Tobacco is increasingly recognized as a key risk factor to human development. Tobacco taxation is correspondingly seen as an effective intervention with important benefits for sustainable development.

In 2015, the Addis Ababa Action Agenda identified tobacco taxes as crucial for financing sustainable development:

"Price and tax measures on tobacco can be an effective and important means to reduce tobacco consumption and health-care costs, and represent a revenue stream for financing development in many countries."

Third International Conference: Financing for Development

In July 2015, the United Nations Third International Conference on Financing for Development was held in Addis Ababa, Ethiopia. From this conference, the Addis Ababa Action Agenda was agreed to by close to 150 countries.

The Addis Ababa Action Agenda establishes a strong foundation to support the implementation of the 2030 Agenda for Sustainable Development. It provides a new global framework for financing sustainable development by aligning all financing flows and policies with economic, social, and environmental priorities.

One of the new initiatives is that countries agreed that taxes on tobacco reduce consumption and that this revenue can be used for sustainable development.¹
Sustainable Development

Dr. Zheng discusses sustainable development.

The Agenda for Sustainable Development identified 17 sustainable development goals (SDGs) for development. The 17 SDGs cover many aspects of human development and set goals for countries to work toward between now and 2030. Tobacco control finds its place as a development issue in several aspects of the SDGs. Goal 3: Good Health and Well-Being, in particular, is a direct call to reduce mortality.

The 2030 Agenda for sustainable development sets a goal for countries to reduce premature mortality from non-communicable diseases by one-third by 2030—tobacco control is crucial for this. The agenda also commits countries to strengthen their implementation of the WHO FCTC.

Learn more about Goal 3: Good Health and Well-Being.

An infographic titled “Sustainable Development Goals” is shown. The infographic is comprised of 18 rectangles. The rectangles are aligned into 3 rows with 6 rectangles in each row. The rectangles are numbered 1 to 17 reading left to right. The eighteenth rectangle has the World Health Organization logo and the title Sustainable Development goals.

The other 17 rectangles represent sustainable goals and are as follows (with description of image on rectangle):
1. No Poverty (a family holds hands)
2. Zero Hunger (a warm bowl)
3. Good Health And Well-Bring (a heart rhythm line and heart)
4. Quality Education (a book and pencil)
5. Gender Equality (a Venus symbol—often considered to represent a bronze mirror with a handle—for female, and a Mars symbol—often considered to represent a shield and a spear—for male, are integrated; An arrow points up to the right from a central circle; A plus sign is attached to the bottom of the circle; an equal sign is in the circle)
6. Clean Water And Sanitation (a glass of water with an arrow at the bottom pointing down)
7. Affordable And Clean Energy (a light radiates)
8. Decent Work and Economic Growth (above a bar graph a line with an arrow points up and to the right)
9. Industry, Innovation And Infrastructure (three cubes are stacked)
10. Reduced Inequalities (an equal sign is inside an incomplete circle)
11. Sustainable Cities And Communities (four buildings from a cityscape sit side by side)
12. Responsible Consumption And Production (an infinity symbol—a figure eight on its side—has an arrow on the end of the line segment connecting the symbol)
13. Climate Action (the world sits inside an oval)
14. Life Below Water (a fish swims underwater)
15. Life On Land (birds soar above a tree)
16. Peace, Justice And Strong Institutions (a dove sitting on a gavel holds an olive branch)
17. Partnerships For The Goals (five circles are intertwined)

The infographic’s source is the World Health Organization.
Sustainable Development (continued)

Learn more about how tobacco control is framed as a way to accelerated development in LMICs.

WHO FCTC: An Accelerator for Sustainable Development

References


Harnessing the Power of Economic Evidence and Advocacy for Tobacco Taxes

Dr. Zheng discusses harnessing the power of economic evidence and advocacy, and how the evidence on the economics of tobacco is extensive.

Evidence on the economics of tobacco is more widely spread—researchers and advocates have collected many helpful tools and have documented ways in which the tobacco industry undermines tax policies.

Select the Campaign for Tobacco-Free Kids link for examples of fact sheets that summarize complex research to inform countries about successful tobacco tax policies.

Campaign for Tobacco-Free Kids

Select the link to access the Global Issues: Taxation and Price page of the Campaign for Tobacco-Free Kids website. In the Related Resources column, select the Undermining Government Tax Policies: Common Strategies Employed by the Tobacco Industry in Response to Tobacco Tax Increases for a comprehensive analysis of strategies attacking tobacco taxes.

Global Issues: Taxation and Price

Industry Efforts: Influence Thinking on Taxes

Dr. Zheng discusses the industry’s efforts to influence thinking on taxes.
Industry efforts have tried to convince governments that tobacco taxes are not effective, or that tax increases should be small to avoid the threat of illicit trade.

Tobacco companies have a long history of using front groups to promote their products. One of these front groups, the International Tax and Investment Center (ITIC), was forced to stop accepting tobacco sponsorship in May 2017.

**Campaign Victory Disarms Big Tobacco’s Lobby Front in Developing Countries**

Posted on May 22, 2017 by Tax Tobacco for Life (taxtobacco.org)

THE INTERNATIONAL TAX AND INVESTMENT CENTER (ITIC) HAS BEEN FORCED TO STOP ACCEPTING ANY FURTHER TOBACCO SPONSORSHIP

For more than two decades, big tobacco companies have used the neutral-sounding ‘International Tax and Investment Center’ (ITIC) to promote their agenda around the world. Since tax policies are the single most powerful measure to reduce tobacco consumption, and the inevitable deaths that follow, the influence of ITIC on public officials and finance ministers can be—literally—a killer. ITIC has targeted developing countries as major growth markets for tobacco; it is in these countries where the death toll is the greatest if the tobacco lobby succeeds.

But no more.¹

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To: Board of Directors  
International Tax and Investment Center (ITIC)
From: Alan P. Dye  
Subject: Changes to Board of Directors and Sponsor Status

Several discussions about tobacco company sponsorship have continued since ITIC’s Board meeting in November.

I am writing to inform you that the Executive Committee of the Board of Directors has decided that ITIC will no longer accept sponsorship contributions from tobacco companies and that tobacco company representatives will be asked to resign from ITIC’s Board of Directors.

I remain available for any questions you may have on this matter.
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**Australia: Mandating Plain Packaging—before Passing Legislation**

Dr. Zheng discusses Australia’s plain packaging mandate efforts.

Economic evidence has strengthened the case for non-price tobacco control measures. When a policy like plain packaging is introduced in a country, in addition to questioning the health impact, many highlight the threats like a possible loss of business to small shops, or a rise in illicit tobacco.

Before passing legislation, many countries have to carry out a “regulatory impact analysis” of the overall impact of the legislation, in other words, an assessment of what the possible effects of the new requirements would be including the economic impact.

"The objectives of tobacco plain packaging as set out in Australia’s Tobacco Plain Packaging Act 2011 were to improve public health by discouraging people from using tobacco products, encouraging people to give up using tobacco products, discouraging relapse of tobacco use, and reducing exposure to tobacco smoke."²

**After Passing Legislation**

Dr. Zheng discusses best practices after passing legislation.

After passing legislation and regulations, it is good practice to seek evidence on their impact. In the short term, such evidence can strengthen policies—for example, not including one type of tobacco product in a smoke-free legislation may be an oversight, and finding that smokers exploit the loophole can help fix the law. In the longer term, strong, independent evidence assures policymakers of the direction of the laws they passed.

Given the global nature of the tobacco problem and of tobacco control, evidence of the success of one country's policies is an important resource for other countries' legislative and regulatory efforts.
Australia: Mandating Plain Packaging

Read part of an abstract of a research paper published in the Tobacco Control journal for evidence that Australia’s laws mandating plain packaging did not result in more illicit tobacco. These parts are provided verbatim.

Use of illicit tobacco following introduction of standardised packaging of tobacco products in Australia: results from a national cross-sectional survey

Objectives
To assess whether following standardisation of tobacco packaging in Australia, smokers were, as predicted by the tobacco industry, more likely to use illicit tobacco.

Methods
National cross-sectional telephone surveys conducted continuously from April 2012 (6 months before implementation of plain packaging (PP)) to March 2014 (15 months after) using responses from current cigarette smokers (n=8679). Changes between pre-PP, the transition to PP and PP phase were examined using logistic regression models.

Conclusions
While unable to quantify the total extent of use of illicit manufactured cigarettes, in this large national survey we found no evidence in Australia of increased use of two categories of manufactured cigarettes likely to be contraband, no increase in purchase from informal sellers and no increased use of unbranded illicit ‘chop-chop’ tobacco.

Australia: Plain Packaging Laws Did Not Harm Economics

Read portions of a research letter published in the Tobacco Control journal for evidence that plain packaging laws in Australia did not harm the economics of retailing in Australia—that is, they did not place a larger burden on small stores. These portions are provided verbatim.

Did smokers shift from small mixed businesses to discount outlets following the introduction of plain packaging in Australia? A national cross-sectional survey

This survey provides no evidence of a shift to overseas or duty-free purchase. This was to be expected given the reduction in the limit for import of duty-free cigarettes—from 200 to 50 cigarettes per person—that came into force in September 2012.

The results of this large national study confirm those of our earlier study conducted in Victoria which also found no decline in percentages of smokers purchasing from convenience outlets following the introduction of PP. Findings of our study corroborate sales data from international market research company, Euromonitor, which suggest no major shifts in channel of purchase between 2012 and 2013.


Using Champions to Dispel Myths About Tobacco Taxes

Dr. Zheng discusses using champions to dispel myths about tobacco taxes.

Some of the strongest public health allies are from ministries of finance that have successfully improved tobacco taxes in their countries. Economists and public finance experts in one country speak the same language as ministries of finance in other countries. They are often the most effective messengers on taxation.
The next generation of tobacco control leaders has the task of identifying and partnering with the next generation of public finance champions.

Quiz

Which of the following is often the most effective messenger on taxation?

- doctor
- public finance expert
- tobacco control (or public health) professional
- Minister of Health

Answer

Public finance expert: Some of the strongest public health allies are from ministries of finance that have successfully improved tobacco taxes in their countries. Economists and public finance experts in one country speak the same language as ministries of finance in other countries.

Using Champions to Dispel Myths About Tobacco Taxes (continued)

“SCARE” is an acronym coined by Mr. Jeremias Paul, formerly of the Philippines Ministry of Finance, as a summary of the challenges thrown by the industry to oppose tobacco taxes.

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How are these SCARE tactics used to hinder increasing tobacco taxes?

- Tobacco industry SCARE tactics and misinformation are the key hindrance to increasing tobacco taxes worldwide.
• This is especially the case in low- and middle-income countries (LMICs) that often lack technical capacity and/or political commitment.

Select the link to access the National Cancer Institute website. Various options for accessing the NCI & WHO Monograph: The Economics of Tobacco and Tobacco Control are available on this page.

**NCI Tobacco Control Monograph Series: 21**

### Summary

Dr. Zheng summarizes the Emerging Issues Lecture.

Advances in the economics of tobacco control build on the core tools of economics and apply them to new challenges in the field; developments include better estimates of price responsiveness of tobacco demand, costs of tobacco use, and cost-effectiveness of tobacco control interventions are emerging from many more low- and middle-income countries.

Tobacco taxes are now globally recognized for their importance to achieve country health targets and for their usefulness as a mechanism to finance development priorities. Economics can seem complex but it is the language of policymaking, and is harnessed ever more effectively by researchers, advocates, and tobacco control champions.

### References


Module Complete.