The tobacco industry: price and demand

Overview

Nowadays, the tobacco industry is one of the profitable industries which government and company provided can earn with. In economic point of view, the tobacco is important as a part of microeconomic and macroeconomic.

Introduction

Benefits of tobacco to the economy:

Greater consumer spending:

The tobacco industry argues that it can satisfy employment field and also government in case of revenue. However there are two points in this argument. Firstly, it underestimates the magnitude of tobacco's impact on the economy by ignoring costs such as lost productivity and provision of health care for illnesses caused by smoking. Secondly, the industry exaggerate the importance of jobs in the tobacco industry by assuming that resources devoted to tobacco production and distribution would disappear if tobacco production were reduced or if sales were to decline.

Reduced lifetime demand for health care services:

It is often argued that smokers actually save the taxpayer money by dying early, thereby avoiding lengthy and expensive care in old age.

A Danish study has examined the question of lifetime impact on health care by estimating the health costs to society over the entire lifetime of smokers compared to those who quit smoking. The researchers found that the potential lifetime health costs to society associated with continuing to smoke are substantial, in terms of both excess health care operation and reduced worker supply. The potential direct and productivity lifetime health cost

savings to society associated with quitting are highest at the younger ages. Comparing 35-year-old ex-smoking men who quit smoking at the age of 35 with 35-year-old continuing smokers, the direct lifetime health cost savings of smoking cessation to society are 30-42%. The corresponding results are 34-43% in ex-smoking women. However the direct lifetime cost savings of smoking cessation to society is reduced to less than 12% in ex-smokers who quit later than at the age of 55.

Additional revenue for government:

As explained later tobacco tax is the one of the important way to earn from the market.

Demand -supply

The impact of price on the demand for tobacco products:

Cigarette is the important tobacco products. Researchers on one occasion viewed cigarette smoking and other addictive behaviours as silly and therefore not suitable for usual economic analysis (Elster, 1979; Winston, 1980; Schelling, 1984b). According to demand -low; the quantity demanded of a good falls when the price of the good rises. When income goes up the demand for a normal good will grow, and for inferior good goes down.

Abstractly, economists use a relatively broad definition of price that includes not only the financial price of purchasing a product, but also the time and other costs related with using the product. limitations on smoking in public places and private work sites, for example, inject additional costs on smokers by forcing them outdoors to smoke, raising the time and discomfort associated with smoking, or by imposing fines for smoking in restricted

areas. Similarly, limits on youth access to tobacco may raise the time and potential legal costs associated with smoking by minors, while new information on the health consequences of tobacco use can raise the perceived long-term costs of smoking.

Because the demand for tobacco products responds to changes in price, increasing the price and tax of tobacco products is also the most effective way to reduce tobacco demand. Numerous economic studies of tobacco price increases have always found that price elasticity of demand generally falls down in developed countries, or that increasing in price results reduction in consumption . According to Barber et. al (2008) in low- and middle-income countries has found similar or greater reductions in consumption. These studies mention price elasticises ranging from -0. 50 to -0. 70 in Southeast Asia -0. 09 in Thailand and -0. 23 in Sri Lanka and in China -0. 54. With these studies, research in Indonesia demonstrates price elasticises of -0. 29 to -0. 67, or that a 10 percent increase in cigarette price results in a decline in cigarette consumption of 2. 9 to 6. 7 percent. Also, because tobacco is an addictive product, the long-run impact is greater than the short-run impact.

Barber et. al (2008) also said, evidence has shown that younger people and people with low incomes are especially responsive to tobacco price increases. In Indonesia as in most other countries, people start smoking during childhood and adolescence. Recent estimates suggest that price elasticity of demand among youth could be three times greater than elasticity for adults meaning that youth are much more likely to quit, reduce consumption, or not start using tobacco in response to price changes.

Therefore, keeping real tobacco prices high through taxation represents the most effective tool in preventing uptake and encouraging cessation among youth. This is particularly important in light of evidence that youth access policies alone (such as age restrictions for buying cigarettes) have proven to be ineffective.

Similarly, research in industrialized countries has demonstrated higher price elasticises among low income smokers when compared with high-income smokers. These studies conclude that increases in real cigarette prices through tobacco taxes could narrow socioeconomic inequalities in health. Figure 1. 1 shows the ratio of real price of tobacco and per capita annual domestic sales between 1970 till 2005 in Indonesia.

Figure 1: Comparison of Real Tobacco Prices and Per Capita Annual Domestic Sales, 1970 to 2005

Source: Sara Barber “ Tobacco Economics in Indonesia” 2008

In many high-income countries, tobacco is an inferior good. However, in Indonesia, income elasticity is positive, and cigarettes are normal goods.

Reductions in consumption resulting from higher cigarette prices are offset by increases in consumption because of rising household incomes. Studies examined here predict income elasticises between 0. 32 and 0. 76, or that a 10 percent increase in income results in an increase in tobacco consumption between 3. 1 and 7. 6 percent. A tax increase aimed to reduce tobacco consumption, therefore, needs to be large enough to offset the increases in consumption expected with rising household incomes.

Where taxes are effectively passed on to consumers in the form of increased prices, significant public health benefits can occur – such as cessation, reductions in smoking uptake, and declines in tobacco consumption. In the Asia-Pacific region alone, a 33 percent price increase could avert between 10 and 28 million deaths, and a 50 percent increase could avert 15 to 38 million deaths. 50 In Indonesia, with some 57 million smokers, even a moderate tax increase to 50 percent of the sales price could avert approximately 0. 6 to 1. 4 million tobacco-related deaths. Therefore, tobacco price increases are the most effective policy measure available to spur declines in smoking prevalence and uptake and reduce overall tobacco consumption, thereby promoting population health and welfare. At the same time, demand for tobacco products is inelastic; that is, the percentage reduction in demand is less than the percentage increase in price. In other words, many smokers would continue their addiction even at higher prices. With a relatively small impact on the tax base, an increase in tobacco taxes will result in a net increase in total government revenue from the tax, regardless of reduced sales volume for cigarettes.

Simulations of a 5 percent annual increase in real tobacco prices report that tax revenue gains would be substantial. Keeping tobacco prices high through regular increases in tax, therefore, has proven effective in generating both positive health outcomes and increased government revenue. However, the impact of price and tax measures on health and revenues depends on a number of factors, including the structure of the market, industry responses to tax increases, household responses to prices, the extent to which consumers substitute cheaper tobacco products, the structure and running

of the tax, and other related government policies. In addition to price, a variety of other factors can affect the demands for cigarettes and other tobacco products, including income, advertising and other promotional activities, and tastes. In the industrialized nations, the relationship between income and cigarette consumption has reversed. Early demand studies (for example, Ippolito, et al., 1979; Fujii, 1980) concluded that cigarette smoking was a normal good, with cigarette consumption rising as income rose. Recent studies, however, have found that cigarettes have become an inferior good, in that the likelihood of smoking declines as income rises (Wasserman, et al., 1991; Townsend et al., 1994). The effects of advertising and promotion on the demand for cigarettes have been the subject of numerous studies; Economics of Smoking Finally, nearly all econometric studies of cigarette demand use a variety of factors to control for tastes, including gender, race, education, marital status, employment status, and religiosity. Given the focus of this book on economics, the impact of these socio-demographic determinants of demand will not be reviewed. According to demand curve low, during last 10 years the demand curve has have shift in index. It means the change occurs in demand not quantity of demand.

Economic facts

Elasticity of demand:

A fundamental building block of economic theory is the fact that increasing (or decreasing) the price of a good of trade reduces (or increases) demand for that commodity. Price elasticity of demand refers to the extent to which use of a product falls or rises after increases or decreases in its price. If price elasticity of demand for a product were very low-that is, inelastic-then

demand would fall or rise only a little in response to price changes. While demand for tobacco products is not as elastic as demand for many other consumer products research has time after time demonstrated that increases in the price of tobacco products are followed by reasonable falls in both the percentage of people smoking and the amount or number of tobacco products that remaining smokers consume. Because increases in tobacco taxes result in higher tobacco prices for everyone, the effect of even small resulting reductions in tobacco use can be very large across the whole population.

Estimates of elasticity:

The level to which demand for a particular product responds to changes in price is an empirical question, the answer to which can be done by measuring trends in consumption as prices and other relevant factors change.

Depending on the size of the price increase, reduced consumption of tobacco products following increases in tobacco taxes can be quite substantial. In 1999, a World Bank review concluded that, all else being equal, price rises of about 10% would on average reduce tobacco consumption by about 4% in developed countries and about 8% in developing countries.

Many studies examining the price elasticity of demand have used population-level data-that is, the total amount of tobacco purchased or taxed for the entire population. Some of these studies have analyzed changes in taxable or reported sales of all tobacco products, and some have looked at cigarettes alone. Some have measured the weight of product sold, others the number

of units. Some studies have compared consumption in the same jurisdiction with different prices over time. Others have compared consumption in jurisdictions with different prices at the same points in time (World Bank 2008).

Elasticity of supply:

Price elasticity of supply measures the relationship between change in quantity supplied and a change in price (James L. Hamilton 1972). If supply is elastic, producers can increase output without a rise in cost or a time delay If supply is inelastic, firms find it hard to change production in a given time period.

The formula for price elasticity of supply is:

Percentage change in quantity supplied divided by the percentage change in price

When Pes > 1, then supply is price elastic

When Pes < 1, then supply is price inelastic

When Pes = 0, supply is perfectly inelastic

When Pes = infinity, supply is perfectly elastic following a change in demand

So many factors can affect in elasticity of supply like spare production capacity, stocks of finished products and components, ease and cost of factor substitution and time provided in production process. The tobacco also is not exceptional.

Market structure:

In recent years, dozens of cigarette manufacturing companies are under four major private corporations: Altria/Philip Morris, British American Tobacco, Japan Tobacco International, and Imperial Tobacco. State monopolies are also major cigarette manufacturers. The largest state monopoly is China National Tobacco Corporation, with a global cigarette market share that exceeds that of any private company. Because the European Union intends to restrict further mergers and acquisitions that increase a tobacco company's market-share dominance, industry consolidation trends may have peaked.

Figure 2: Company profile

Source: The tobacco Atlas

Complimentary good:

Alcohol plays a complimentary role against tobacco.

Demand intervention:

1-There is strong evidence linking increases in price to decreases in demand for tobacco products, the consensus being that price elasticity is related to age. Increases in tobacco tax, also, are considered to be one of the most effective tools for decreasing smoking especially among children.

In the United States, it is estimated that a US$1. 50 increase in cigarette taxes and prices would reduce overall cigarette consumption by about 30% while cutting youth consumption by 50%. Several economists have taken evidence about demand elasticity and combined it with data on the health

consequences of quitting smoking to project health gains that would be achieved with tax increases of various levels.

Figure 3: Average Cigarette Price, Tax, and Percentage of Tax Share per Pack, by Income Group

Source: Dean T Jamison " Disease Control Priorities in Developing Countries, 2nd edition" 2006

Restrictions on Smoking:

Over the past three decades, as the quantity and quality of information about the health consequences of exposure to passive smoking have increased, many governments, especially in high-income countries, have enacted legislation restricting smoking in a variety of public places and private worksites. In addition, increased awareness of the consequences of passive smoke exposure, particularly to children, has led many work-places and households to adopt voluntary restrictions on smoking. Although the intent of those restrictions is to reduce non smokers' exposure to passive tobacco smoke, the policies also reduce smokers' opportunities to smoke. Additional reductions in smoking, especially among youths, will result from the changes in social norms that are introduced by adopting these policies.

Health Information:

Research from high-income countries indicates that these initial reports and the publicity that followed about the health consequences of smoking led to significant reductions in consumption, with initial declines of between 4 and 9 percent and longer-term cumulative declines of 15 to 30 percent (Kenkel and Chen 2000; Townsend 1993).

Bans on Advertising and Promotion:

Cigarettes are among the most heavily advertised and promoted products in the world. In 2002, cigarette companies spent US$12. 5 billion on advertising and promotion in the United States alone, the highest spending level reported to date (U. S. Federal Trade Commission 2004). Tobacco advertising efforts worldwide include traditional forms of advertising on television, radio, and billboards and in magazines and newspapers as well as favourable product placement; price-related promotions, such as coupons and multipack discounts; and sponsorship of highly visible sporting and cultural events.

Smoking Cessation Treatments:

Numerous behavioural smoking cessation treatments are available, including self-help manuals, community-based programs, and minimal or intensive clinical interventions.

Interventions to Reduce the Supply of Tobacco:

The key intervention on the supply side is the control of smuggling. Recent estimates suggest that 6 to 8 percent of cigarettes consumed globally are smuggled (Merriman, Yurekli, 2000).

Revenue:

It is clear that governments can earn by implementing taxation on tobacco products. Below

estimated Vietnam government revenue from tobacco tax.

Figure 4: Vietnam government revenue from tobacco tax in 2005-2009

Source: The tobacco Atlas.

Employment:

The government has introduced a lower starting rate of income tax for lower income earners. This is designed to provide a motivation for people to work extra hours and keep more of what they earn.

Changes to the tax and benefit system also seek to reduce the risk of the poverty where households on low incomes see little net financial benefit from supplying extra hours of their labour. If tax and benefit reforms can improve incentives and lead to an increase in the labour supply, this will help to reduce the equilibrium rate of unemployment and thereby increase the economy's non-inflationary growth rate.

Costs of economy:

Tobacco companies frequently attempt to persuade governmental authorities and the public that smoking has economic benefits. In fact, tobacco imposes huge economic costs on every country. Tobacco's estimated $500 billion drain on the world economy is so large that it exceeds the total annual expenditure on health in all low- and middle-resource countries (The Tobacco Atlas).

Medical costs from smoking impoverish more than 50 million people only in China in 1998.

Figure 5: Economic cost of Tobacco

Source: The Tobacco Atlas

Figure 6: Total economy cost of tobacco as percentage of GDP for high and middle income countries

Source: The Tobacco Atlas

Cost to smoker:

Smokers spend great sums of money on a product that damages their health and financial security. These resources could be used to cover basic human needs, such as food, shelter, clothing, health care, and education. In poverty stricken communities where food costs represent a significant portion of household budgets, expenditures on tobacco may make the difference between an adequate diet and malnutrition for the smoker's family. According to the tobacco atlas, the average smoker wages in Albania is two months' wages (US$436) per year on cigarettes. In Bangladesh, If the average household bought food with the money normally spent on tobacco, more than 10 million people could be lifted from malnutrition and 350 children under age five could be saved each day.

Figure 7: Price of 20 Marlboro relative to the price of a big Mac

Source: The Tobacco Atlas

Tobacco trade:

International commodity trade in tobacco is big business, with an estimated annual value of $22 billion: $7 billion in raw material (tobacco leaves) and $15 billion in finished product (manufactured cigarettes).

China grows more than 40 percent of the world's tobacco, but only 5 percent of China's leaf is exported. Most of the remaining 95 percent is consumed domestically by China's 350 million smokers. Brazil, India, and China grow most of the world's tobacco leaf, overtaking former major producers such as

the United States, where tobacco agriculture has been in steady decline for decades.

U. S. cigarette export volume has declined by more than 50 percent since 1996, valued at US$1. 2 billion in 2006 (largely in sales to Japan). The Netherlands and Germany each export more than $3 billion in cigarettes annually. Many low- and middle-income countries, such as China, Malaysia, Poland, and Indonesia, are increasing capacity for cigarette production and export, competing aggressively with the major cigarette exporting nations. U. S. Cigarette imports increased more than 500 percent from 2. 6 billion sticks in 1996 to 17 billion in 2006.

Japan receives 75 percent of U. S. cigarette exports.

Monitor tobacco use and prevention policies

Protect people from tobacco smoke

Offer help to quit tobacco use

Warn about the dangers of tobacco

Enforce bans on tobacco advertising, promotion and sponsorship

Raise taxes on tobacco

Building on the first-ever global public health treaty – the Framework Convention on Tobacco Control (FCTC) – the World Health Organization (WHO) in 2008 issued a comprehensive country-level report on the global tobacco epidemic. This report provides data from 179 countries covering

99% of the world’s population and sets baselines for implementation and enforcement of the six evidence-based and cost-effective policies of the WHO MPOWER strategy. Currently only 5% of the world’s population is fully protected by any one of the MPOWER interventions and no country implements and enforces all of them. By taking action to implement MPOWER, the leaders of governments and civil society can create the necessary environment to protect children from tobacco, help people quit tobacco use and save millions of lives a year.

The final version of the online Tobacco Atlas will have information on MPOWER steps related to the issues portrayed on each map.

“ The dramatic increase in the proportion of the world’s cigarette market now open to free enterprise [makes these] the most exciting times I have seen in the tobacco industry in the last forty years.”

-Patrick Sheehy, chairman, BAT industries, October 1990, referring to countries of the former Soviet Union

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Figure 8: Top 10 importers

Figure 9: Top 10 exporters