SLIDE 1:
Good morning; I would like to thank the organizers for the opportunity to speak today on a significant issue – the relationship between tobacco taxation and public health. Much of the background material for this talk, as well as the slides used in my talk, are available at the web-site address shown on the screen.

SLIDE 2:
The issues I am going to discuss this morning are described in some detail in two recent publications. The first, Curbing the Epidemic: Governments and the Economics of Tobacco Control, is a World Bank Policy Report coauthored by Prabhat Jha and I. This report highlights the global public health toll resulting from tobacco use and the policy tools governments can use reduce tobacco use and its consequences. The second, Tobacco Control in Developing Countries, coedited by Prabhat Jha and I, contains the detailed background papers that were used to produce the World Bank report. These papers include thorough reviews of the literature in numerous areas, as well as new analyses on the impact of tobacco use and tobacco control efforts.

SLIDE 3:
Historically, governments have used tobacco taxation as a way to generate revenues. These taxes have relatively low administrative costs, generate substantial revenues, and, because of the relatively inelastic demand for tobacco products, result in relatively limited economic distortions. The general acceptance of these taxes goes back hundreds of years, as can be seen from the quote by Adam Smith that “sugar, rum and tobacco are commodities which are no where necessaries of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation.”

SLIDE 4:
More recently, as information about the morbidity and mortality caused by tobacco use has become widespread, governments have begun to used tobacco taxation as a means to improve public health. The increases in tobacco taxes result in significant reductions in tobacco consumption which, as a result, lead to substantial reductions in the public health burden caused by tobacco. In addition, these taxes can improve economic efficiency by acting as user fees on tobacco consumers that cover the social costs resulting from tobacco use and its consequences.

SLIDE 5:
Globally, tobacco use is increasing. This increase is the result of several factors, including increases in incomes and increased trade liberalization. The increases in global tobacco use reflect the sizable increases in tobacco use in developing income countries, which more than offset the reductions in tobacco use that are generally seen in developed countries, including Mexico and the United States.

SLIDE 6:
These increases in global tobacco use, combined with the lags between tobacco use and its health consequences and the shift in tobacco use to developing countries, imply substantial health consequences over the next century. Over the past century years, approximately 100 million persons have died prematurely as a result of their tobacco use, with the vast majority of these deaths occurring in developed countries. On current trends, over 1 billion persons, including 500 million persons currently alive, will die from tobacco attributable illnesses in the next century, with most of these
deaths in developing countries. Current estimates imply that about half of all long-term regular
smokers die prematurely as a result of their addiction to tobacco, with about half of these deaths
occurring in productive middle age.

SLIDE 7:
Smoking is particularly important in explaining the health gaps between the rich and the poor. This
slide illustrates the probability of a 35 year old male in Poland dying before the age of 70 for men with
different levels of education. Those with the least education are nearly twice as likely to die
prematurely as those in the most educated category. Researchers estimate that smoking accounts for
about two-thirds of the excess risk of death between these two groups. Very similar findings emerge
from comparable studies of other countries.

SLIDE 8:
Particularly problematic is the fact that tobacco addiction starts early in life. This graph illustrates the
percentage of adult regular smokers who began smoking at various ages for the United States, China,
and India. Two key conclusions emerge. First, nearly all person who go on to become regular
smokers as adults begin smoking before the age of 20 years. Second, as illustrated by the two lines for
the United States, the average age of smoking initiation has fallen over time. Given current trends, we
estimate that between 80,000 and 100,000 youths globally become regular smokers each day.

SLIDE 9:
The public health consequences of tobacco use provide a clear motive for government intervention in
tobacco product markets. In addition, there are several market failures that provide an economic
rationale for government action to reduce tobacco use. First, it is clear that smokers do not fully
understand the risks associated with tobacco use. Second, this underestimation of risks is complicated
by the fact that smoking begins during adolescence, when the long-term consequences of tobacco use
are heavily discounted and when the addictiveness of tobacco use is not fully appreciated. Finally,
tobacco use imposes costs on others resulting from both the health consequences of exposure to
environmental tobacco smoke as well as the increased health care and other costs associated with
treating tobacco-attributable illnesses.

SLIDE 10:
The risks of smoking are particularly underestimated in low and middle income countries. For
example, a recent survey of adult male smokers in China found that 7 of every 10 smokers thought that
smoking did them little or no harm. In addition to a general underestimation of risks, the risks from
tobacco use are not internalized; in other words, smokers perceive their personal risks from smoking to
be significantly lower than the average risks, or risks to others who smoke. Finally, the consequences
of addiction are severely underestimated by adolescents beginning to smoke. In the United States, for
example, most teenage smokers expect to quit smoking within the next five years, but fewer than 2 in 5
actually succeed in doing so. Similarly, several surveys from high income countries indicate that over
70 percent of current smokers wish that they had never started smoking.

SLIDE 11:
Several studies from high income countries, and a growing number from low and middle income
countries, clearly show that smoking creates significant health care costs. Estimates from high income
countries imply that annual gross costs from treating smoking attributable illnesses can exceed one
percent of Gross Domestic Product and account for up to 15 percent of total health care costs. Studies from lower income countries produce similar estimates. Because smokers die sooner than nonsmokers, the differences between lifetime costs and annual costs are smaller. However, the best of the recent studies suggest that there are net lifetime costs resulting from smoking.

SLIDE 12:
Given the public health toll and economic costs resulting from tobacco use, governments have several roles for intervening in tobacco markets. These include deterring children from smoking, protecting non-smokers from exposure to others tobacco smoke, and providing adults with the information needed to make an informed choice. While there are policy tools that directly address each of these, these “first best” instruments are often ineffective. Increases in tobacco taxes, while relatively blunt instruments, are very effective, particularly in reaching the populations least affected by other interventions.

SLIDE 13:
Moreover, for substantial improvements in public health to occur over the next 50 years, policies that cause current smokers to quit are needed. As this graph illustrates, on current trends, 520 million smokers will die prematurely in the next 50 years. If only youth-focused policies are adopted and are successful in cutting smoking initiation in half, by 2020, 500 million smoking attributable deaths will still occur in the next 50 years. Alternatively, if a broader set of policies, including significant tobacco tax increases, is adopted and effective in reducing adult smoking by half by 2020, the number of smoking attributable deaths over the next 50 years would fall by over one-third.

SLIDE 14:
Our reviews of the evidence conclude that measures that seek to reduce the demand for tobacco products are very effective in reducing tobacco use and its consequences. These include tobacco tax increases, the dissemination of information on the health consequences of tobacco use through strong health warning labels, countermarketing campaigns, and other efforts, comprehensive restrictions on tobacco product advertising and promotion, comprehensive restrictions on smoking in public places and workplaces, and increased access to nicotine replacement products and other cessation therapies.

SLIDE 15:
Of these, increased tobacco taxation is clearly the single most effective policy for reducing tobacco use. Higher tobacco taxes and prices lead to increased quitting, reduced relapse, lower consumption among continuing smokers, and reduced smoking initiation. Over one hundred studies from high-income countries imply that a ten percent increase in the prices of tobacco products will reduce overall tobacco use by 4 percent, with about half of the impact resulting from reductions in the number of tobacco users, and the other half resulting from reduced consumption by continuing tobacco users. A growing number of studies from low and middle income countries conclude that tax increases would be even more effective in reducing consumption in these countries, with a ten percent increase in prices reducing overall tobacco use by 8 percent.

SLIDE 16:
In addition, because of the addictive nature of tobacco use, the impact of sustained increases in tobacco taxes will grow over time as addicted smokers and other tobacco users increasingly respond to the price changes. The best estimates suggest that the long-run impact of a permanent price increase is
about double that of the short run impact. Moreover, populations that tend to respond less to other policies, including youth and young adults, the least educated, and the poor are the most responsive to tax and price increases. Numerous studies from the United States, for example, imply that teenagers are 2 to 3 times more sensitive to price than are adults.

SLIDE 17:
The inverse relationship between prices and tobacco use are highlighted in the next two graphs. This graph shows the situation in South Africa in the 1970s and 1980s, where inflation adjusted cigarette prices declined significantly leading to increases in cigarette smoking.

SLIDE 18:
The opposite is seen in this graph showing the experiences of the United Kingdom from 1971 through 1996. During this time, cigarette prices increased substantially, largely the result of significant cigarette tax increases, while cigarette smoking declined sharply.

SLIDE 19:
While it is clear that tobacco tax increases lead to significant reductions in tobacco use and its consequences, determining the optimal tobacco tax is a complex question that depends on several factors. Governments seeking to improve public health and to deter children from smoking, for example, would set tobacco taxes much higher than those seeking to maximize the revenues they obtain from these taxes. We suggest that a useful target is the level of taxes in countries that have adopted comprehensive programs to reduce tobacco use. In these countries, tobacco taxes account for between 2/3 and 4/5 of the retail prices for tobacco products.

SLIDE 20:
As this graph shows, there is still ample room, especially in lower-income countries, for raising taxes to this level. In high income countries, with the notable exception of the United States, cigarette taxes account for just over 2/3 of cigarette prices. The share of taxes falls on average as income falls, with taxes accounting for about 50-60 percent of price in Mexico and other upper middle income countries, but only 40 percent or less in the lowest income countries.

SLIDE 21:
In addition to directly improving public health by raising tobacco taxes and reducing tobacco use, many governments have generated additional public health improvements by earmarking or dedicating part of the revenue from tobacco taxes to other activities. Several, including many US states such as California and Massachusetts, cities such as China’s Chongqing, and others, have used these taxes to fund comprehensive tobacco control programs that include large mass-media countermarketing campaigns that lead to substantial reductions in tobacco use and its consequences. Others, including New Zealand and several Australian states have used tobacco tax revenues to replace tobacco industry funding of sporting and artistic events, negating the increased tobacco use that resulted from the tobacco company advertising and promotion at these events.

SLIDE 22:
Still others, including Canada, Ecuador, Finland, Peru, Portugal, the United States, and many others have used tobacco taxes to expand public health insurance programs to cover underinsured populations, to fund cancer control research, and to support other public health efforts. Finally, a
Growing number of governments are considering using tobacco tax revenues to help tobacco farmers and those employed in tobacco manufacturing move into other crop production and other industries.

SLIDE 23:
To get some sense of the potential public health benefits resulting from increased tobacco taxation, we estimated the impact of tax increases that would raise tobacco product prices by 10 percent globally and compared this to the impact of a package of non-price related tobacco control efforts that included restrictions on smoking, comprehensive bans on advertising and promotion, and other policies. We estimate that a ten percent price increase would reduce the number of smokers globally by 42 million, with the vast majority of this reduction occurring in low and middle income countries, while the package of non-price measures would lower the number of smokers by 23 million. As a result, we estimate that there would be 10 million fewer smoking attributable deaths in the current cohort of smokers as a result of the price increase, with 90 percent of the longer lives occurring in low and middle income countries.

SLIDE 24:
Many, including the tobacco companies, have argued that increased tobacco taxation would impose significant economic costs, including reduced revenues from tobacco taxes, significant job losses, increased smuggling, and higher costs to tobacco users. Upon closer examination, however, one sees that these costs are either nonexistent or significantly overstated.

SLIDE 25:
The next two graphs clearly show that tobacco tax increases lead to significant increases in tax revenues, while reductions in tobacco taxes lead to reductions in tobacco tax revenues. The first graph illustrates what happened in the United States from 1960 through 1995.

SLIDE 26:
This graph illustrates the same phenomenon for South Africa. These experiences are not unique to the US and South Africa, but are instead nearly universal, with higher tobacco taxes generating increased tobacco tax revenues. Our estimates imply that a ten percent increase in tobacco taxes would lead to a seven percent increase in tobacco tax revenues, on average.

SLIDE 27:
Similarly, the arguments about job losses resulting from increased tobacco taxes and other tobacco control efforts are overstated and misleading. While it is true that there would be reductions in the number of persons employed in tobacco farming and manufacturing, these job losses would be offset by increases in other jobs that would result as money that was once spent on tobacco products is now spent on other goods and services. This is particularly true in countries like Bangladesh where the majority of tobacco and tobacco products are imported rather than produced domestically, but also applies in nearly all other countries. The only exceptions to this are countries like Zimbabwe which are heavily dependent on tobacco leaf export. Nevertheless, strong domestic tobacco control policies in these countries would have little impact on overall employment and economic well being.

SLIDE 28:
Similarly, the arguments concerning cigarette smuggling are generally overstated by opponents of tobacco tax increases. Recent investigations clearly show that the tobacco companies are often
actively involved in cigarette smuggling as a way of gaining market share and fighting tax increases. Overall, we estimate the cigarette smuggling accounts for approximately 6 to 8.5 percent of overall cigarette consumption. Somewhat surprisingly, we find that non-price factors, including the degree of corruption and the presence of informal distribution systems for tobacco products are more important determinants of smuggling than are differences in cigarette prices resulting from tax differences.

SLIDE 29:
Our analyses clearly show that governments do not need to choose between higher cigarette tax revenues and lower cigarette consumption. Even in the presence of increased smuggling, both will result from tobacco tax increases. In addition, rather than foregoing tax increases, governments have several effective measures available for control smuggling, including better approaches to tracking tobacco products through the distribution system, increased enforcement of existing laws, and the imposition of stronger penalties on smugglers.

SLIDE 30:
Finally, we examined the cost-effectiveness of tobacco tax increases and other tobacco control efforts. As this slide clearly shows, tobacco tax increases that lead to significant increases in tobacco product prices are highly cost-effective, particularly in low and middle income countries. While other tobacco control efforts are less cost-effective, all compare very favorably with other interventions aimed at improving public health.

SLIDE 31:
To summarize, tobacco deaths worldwide are large and growing, particularly among the poor. The public health toll from tobacco and several specific market failures clearly justify government intervention in tobacco markets. Of the policies available, significant tobacco tax increases are most effective in reducing tobacco use, while other demand reduction strategies are also very effective and cost-effective. Controlling smuggling is the major supply side intervention.

Thank you.