ECONOMIC, SOCIAL AND HEALTH ISSUES IN TOBACCO CONTROL

Report of a WHO international meeting
Kobe, Japan, 3-4 December 2001

WORLD HEALTH ORGANIZATION

World Health Organization
Centre for Health Development
Kobe, Japan

INTERNATIONAL MEETING ON THE ECONOMIC, SOCIAL AND HEALTH ISSUES IN TOBACCO CONTROL

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TABLE OF CONTENTS

Preface

Dr Yuji Kawaguchi
Director
WHO Kobe Centre

With the growing prevalence of tobacco use, the negative impacts of smoking are serious and enormous. Smoking is an established cause of a very significant number of deaths, diseases and disabilities worldwide. It is harmful to individual health not only for those who smoke but also for those who are passively exposed to tobacco smoke. Recognizing these alarming facts, smoking must be addressed as an individual, social, economic and environmental burden at the family, community, national, regional and global levels.

It is reported that the number of smokers and the amount of tobacco used have unfortunately increased globally, though there has been some recent declines in developed countries. There are shifting patterns in tobacco-related issues, such as in production, demand, transportation, and consumption. A comprehensive and synchronized approach is therefore needed to evaluate and curb tobacco use on both the demand and supply side.

There are many factors and challenges that need to be faced and overcome to achieve an improvement in individual health. Being aware of the current interlinked issues and global situation it is recognized that controlling tobacco cannot be adequately undertaken by the health sector alone. A comprehensive solid framework is necessary across the United Nations system that includes the close involvement of the World Bank, as well as other intergovernmental and nongovernmental organizations (NGOs), along with a close relationship and collaboration with the Member States. An unstinting effort shall be carried through into implementation locally and globally with full consideration of its potential economic and social impact. In support of this work, we emphasize the need for and will support the sharing of knowledge, experience, skills, and tobacco control strategies that are effective, efficient and manageable.

To address the issues of tobacco supply in the context of health, the WHO Centre for Health Development (WHO Kobe Centre: WKC), collaborating closely with the Tobacco Free Initiative (TFI) of WHO headquarters, organized the International Meeting on Economic, Social and Health Issues in Tobacco Control. Held on 3 and 4 December 2001 in Kobe, Japan, the meeting was a significant global milestone event delegated by an international interdisciplinary group of experts.

Upon the release of this meeting report, I would like to emphasize that multisectoral approaches that take into account the full range of issues, including maintaining sound socioeconomic conditions, are necessary to control tobacco consumption. It is essential that comprehensive, integrated and effective policies are taken forward into action to prevent unnecessary premature death and other harmful health conditions derived from tobacco use, and support and enhance the individual's quality of life.

Preface

Dr Vera da Costa e Silva
Project Manager
WHO/TFI

The spectacular rise of tobacco consumption in the last decade and its spread to every corner of the world has made it a truly global problem. Currently, there are 1.2 thousand million users. Recent estimates show that 4.9 million deaths were caused by tobacco in 2002.

The tobacco epidemic affects every country and society. It imposes a heavy burden on governments that have to deal with expensive health-related costs for the treatment of those who develop tobacco-related diseases. Smokers impose additional costs on society by exposing non-smokers to health risks as well. Among these risks are fire, environmental degradation as well as deforestation from tobacco-growing and processing, and from the consequences of smoking. The impact of a smoker's early death on his or her family is another important cost that is emotional as well as economical, particularly if those families are dependent on the smoker's income.

In addition to its global aspect and its impact on society, tobacco consumption affects each individual, sometimes dramatically. Tobacco users face significantly higher risks than non-smokers of dying from diseases like lung cancer, vascular diseases, chronic bronchitis, emphysema and cancers of other various organs. And half of those killed by tobacco are still in productive middle age. Smokers are also affected by this addiction in many other ways; their productivity at work is reduced because of their poor health or because of the time they waste during work time for smoking. They have a narrowed freedom of action because they always act in accordance with their need to feed their addiction. Finally, the misleading image of the beauty and success of smokers conveyed by the tobacco industry is contradicted by their bad breath and the malodorous clothing that, on the contrary, makes smokers less appealing to others.

In dealing with the heavy social costs imposed by tobacco use, diverse demand-side interventions proved to be effective and cost-effective in reducing the burden of tobacco use. They include price increases, advertising and sponsorship bans, treatment of smokers, measures to combat smuggling, information and advocacy.

To be efficient and effective, those tobacco control policies need to take into account their impact on a country's social and economic resources. Therefore, many governments have avoided implementing effective and comprehensive tobacco control out of concern that their interventions could have harmful economic and social consequences.

Accumulating evidence shows that those fears are largely unfounded. To address these issues the World Health Organization (WHO) and its partners from the United Nations system, the World Bank and other international organizations and groups met in the International Meeting on Economic, Social and Health Issues in Tobacco Control. This meeting, organized by the Tobacco Free Initiative and the WHO Kobe Centre, revisited and provided current answers to those concerns. It focused primarily on the likely impact of tobacco control on the economy of countries and more specifically on the employment of the agriculture and manufacturing sectors of tobacco products.

The results of this meeting are unequivocal: whatever the concern is, countries should do everything in their power to promote the protection of public health, in particular, controlling tobacco use, since this is crucial to the well-being of all their citizens.

Executive summary

Executive summary

This report reviews presentations and discussions conducted at the International Meeting on Economic, Social and Health Issues in Tobacco Control, organized by the WHO Centre for Health and Development (WHO Kobe Centre: WKC) in close collaboration with the WHO Tobacco Free Initiative (TFI), in Kobe, Japan on 3–4 December 2001.

Evidence clearly has shown the adverse impact of tobacco consumption on human health on a global scale. With a disease burden of an estimated 4 million deaths caused by tobacco annually by the year 2000 and a projected rise to about 8.4 million deaths by 2020, it is critical that governments respond to protect public health. However, many governments have avoided implementing effective and comprehensive tobacco control programmes—demand-side interventions such as higher taxes, comprehensive bans on advertising and promotion, or restrictions on smoking in public places—out of concern that their interventions might have harmful economic consequences. Despite mounting evidence produced by the World Bank that such economic fears are largely unfounded, strong tobacco control policies have not been adopted in many countries.

Policies that reduce the demand for tobacco, such as increased tobacco taxes, would not cause long-term job losses in the vast majority of countries, nor would higher tobacco taxes reduce tax revenues; rather, revenues would climb in the medium term. Such policies could, in sum, bring unprecedented health benefits without harming economies.

Supply-side interventions, with the exception of smuggling measures, do not appear to be effective in reducing demand. However, it is important to look at the supply-side implications from effective demand-side tobacco control interventions. Regarding the countries whose economies are dependent on tobacco production, while reductions in domestic demand would have little impact, a global decline in demand could result in job losses. However, for global tobacco production and consumption to decrease and hence cause a reduction in employment, the per capita reduction would have to offset projected increases in global population and income. It is therefore unlikely that significant numbers of tobacco-related jobs will be lost in the coming years. Rather, it is likely that fewer new ones will be created. Policies to assist this long-term adjustment would be helpful.

The International Meeting on Economic, Social and Health Issues in Tobacco Control sought to explore the employment implications of tobacco control policies on the agriculture and manufacturing sectors. It also examined issues related to the contraband of cigarettes and explored the implications of the privatization of State-owned tobacco industries on tobacco product production and consumption. The meeting had an additional purpose, which was to update the research agenda developed by Research for International Tobacco Control (RITC) and WHO in July 1999.

Within the context of interagency cooperation, particularly within the United Nations Ad Hoc Interagency Task Force on Tobacco Control, the Food and Agricultural Organization of the United Nations (FAO) is undertaking a project comprising studies focused on various aspects of the global tobacco economy. Specifically, it seeks to determine the potential effects, if any, that reductions in global demand might have on the economic conditions,

earnings and food security of farming communities in developing countries particularly dependent on the crop for their livelihood.

During the meeting, FAO presented the preliminary results of the project. It drafted a set of projections on the likely levels of production, consumption and trade in tobacco in 2010. In addition, five case studies on China, India, Malawi, Turkey and Zimbabwe explored the economics of tobacco in those countries. Finally, computerized generalized equilibrium models were used on data from those four countries to understand the consequences across the economy of a decline in global demand for tobacco.

In terms of projections, results show that tobacco-product production and consumption are expected to increase in the absence of a significant change in global policies by 2010. This increase will be dominated by developing countries while consumption and production are expected to decrease in developed countries. In the event that many countries adopt effective policies to reduce the use of tobacco products, a gradual decrease in global demand as well as in world prices for tobacco is expected.

The computerized general equilibrium model showed that the implications of a weakening of demand for tobacco are clearly less serious in countries with large and diverse economies and diversified agriculture (e.g. China) than for smaller countries with less diverse economies. Generally, in those countries highly dependent on the crop, there is limited scope for diversification under current market conditions. Some alternatives might become more attractive if either tobacco prices fall or if concerted efforts, including international support, are made to enhance the profitability of producing those alternatives.

The International Labour Office (ILO) has also carried out research on international tobacco control, some of which was presented during the meeting. This work includes a study that showed that employment in the tobacco industry has been decreasing primarily due to the industry's restructuring. Two other studies were conducted on employment in the bidi industry (which manufactures cheap, popular, rolled cigarettes) that plays a major role in India. Another key project, on which the ILO is working, is the promotion of healthy workplaces. The ILO is incorporating support to employers and employees to achieve smoke-free workplaces. The working group for a smoke-free policy in the Safety and Health department of the ILO is drafting a code of practice on tobacco control in the workplace and expanding the existing database on drugs and alcohol to include tobacco issues.

In addition, in the area of employment in the tobacco sector, WHO commissioned five country-case studies (Armenia, Bulgaria, Egypt, Kenya and Viet Nam), to evaluate the impact of tobacco control policies on employment. The World Bank prepared a toolkit on employment to help economists look at the effects tobacco control policies might have on employment. More specifically, this toolkit provided information on how to use the "Input–Output" analysis to evaluate the tobacco control impact on employment and how to make projections of hypothetical/real tobacco control policy scenarios and their impact on employment. This toolkit was used in some of the country case studies. Results show that for the most part, reduction in employment, if any, will be gradual. In some cases, the impact of effective tobacco control policies on national employment may even be positive. This is because consumers will switch from tobacco products to other goods and services that are produced in a more labour-intensive way, thereby increasing the demand for and the production of those products, and generating new jobs.

The smuggling issue was addressed and widely discussed during the meeting. Presentations focused on the causes of smuggling, recent legal court cases on cigarette smuggling, the role of the industry and the different types of smuggling, as well as the description of the activities of the European Anti-Fraud Office in the fight against cigarette smuggling. Evidence shows that most of the smuggling is not due to price differentials between countries but to tax evasion and that corruption seems to be the main reason for smuggling.

Privatization was also explored. Discussions underscored that research should not focus on determining whether or not privatization is good but rather provide guidelines for government officials on how to approach the decision of privatizing. Should governments want to privatize, research should develop policies that need to be in place before privatization occurs so as to protect public health.

During the last session, participants split into working groups to discuss in greater depth all the issues covered during the meeting. The working groups aimed to look for the primary areas on which research should focus. Their conclusions were gathered to update the research agenda by RITC and WHO in July 1999. The research agenda was grouped into eight categories that focused on the following issues:

- Country-specific research
- Policy intervention
- Programme interventions
- Treatment for tobacco dependence
- Tobacco product design and regulation
- Tobacco industry analysis
- Tobacco farming
- The Framework Convention on Tobacco Control

The five country-case studies on employment, as well as the papers on smuggling and on privatization, all commissioned by WHO, have been published along with the report and included as an annex to the present document.

The preliminary findings from the projects summarized during this meeting (the work of FAO and the ILO, as well as the employment studies) were represented in the Secretary-General's report on Task Force activities to the 2002 Substantive Session of the Economic and Social Council. Work is ongoing for these projects (e.g. the FAO report is expected to be finalized in mid-2002[1]).

[1] The finalization of the report has been delayed to the first half of 2003.

Opening addresses

Welcoming remarks

Dr Yuji Kawaguchi
Director
WHO Kobe Centre

It is a great pleasure for me to welcome you all to Kobe City, Japan and to address the opening session of the International Meeting on Economic, Social and Health Issues in Tobacco Control. It is particularly satisfying for the WHO Centre for Health Development, known as the WHO Kobe Centre, to organize this two-day meeting, together with the Tobacco Free Initiative of WHO Headquarters, on 3–4 December 2001.

The issues you will be addressing related to tobacco control are complex. At the same time they offer a perfect example of how the activities of all sectors impact health. The broader economic and social implications of tobacco control are on the Meeting's agenda for good reason. Controlling tobacco use has a major impact on tobacco-producing communities. They may suffer loss of employment; hence alternative crops or other enterprises and work opportunities must be explored. To assess these supply-side implications and make effective decisions to counter the negative economic impact on growers, evidence-based information to make effective decisions is needed. Issues connected to cigarette smuggling and the privatization of State-owned tobacco industries must also be addressed. In this context the WHO Kobe Centre has been pleased to contribute funds for the necessary collection of relevant information in order to make this international meeting successful.

The WHO Kobe Centre is particularly aware of the initiatives that must be taken to identify innovative approaches to combat the damage caused to millions of people by tobacco smoking. For example, in 1999, during my first year as Director of the WHO Kobe Centre, two major events directly related to tobacco control were organized. The first, on the occasion of World No-Tobacco Day was designed to provide an opportunity for the general public, as well as health and other professionals and policy-makers to hear the views and experiences of international experts from China, Japan, New Zealand, Singapore and the United States of America.

The panellists concluded "smoking cessation is as important as smoking prevention while smoking trends are increasing globally. Major efforts should be focused on combined efforts of government and citizens through multisectoral and multi-organizational programmes. Tougher tobacco prices and taxation regulations could be as effective as health advocacy. Health education on smoking prevention and cessation that targets women and children could have a great impact on smokers to quit smoking". The report on this International Symposium served as a contribution from the WHO Kobe Centre to the WHO International Conference on Tobacco and Health, held later the same year, in November 1999. The WHO Kobe Centre was pleased to facilitate the organization of that important Conference also in Kobe City, Hyogo Prefecture, for many reasons, but in particular because of its focus on tobacco abuse in women and youth.

I emphasize this as I am convinced that by addressing women's issues, as seen from women's perspectives in particular, we will be supporting women to lead a movement to reduce risk-taking behaviour and facilitate a shift to more caring societies and improved health and well-being.

With my primary focus on the health aspects, I see the way ahead as follows. While much has been written on tobacco control, including the information collated for this meeting, the same material points to the fact that the information needed to make an informed choice should be more readily available. Consumers need to be much better informed about what is good and bad for their health. We also know that, to a large extent, the old health education model does not work. Herein lies a major challenge, and I may say it is one that the WHO Kobe Centre is addressing in a profound manner.

Let me therefore briefly inform you about the work of the WHO Kobe Centre (WKC). WKC was formally established in Kobe, Hyogo Prefecture, Japan in 1996, just a few months after the Great Hanshin-Awaji earthquake that caused the loss of over 6 400 lives and left many thousands homeless in the city of Kobe and surrounding area. The reconstruction and development that has taken place since that time is remarkable. It is a tribute to the partnership initiatives of the citizens, the local and national authorities, nongovernmental organizations (NGOs) as well as the encouragement provided by the international community. The reconstruction and development is taking place with a clear vision for the future, particularly for people's health and well-being and the overall social and economic development of the communities.

The WHO Kobe Centre is also a symbol of this vision. As a unique, autonomous institute of WHO, WKC's global mission and directions are strongly supported by a consortium involving the local Government, namely Hyogo Prefecture and Kobe City, the private sector, national Government, professional associations and NGOs. These partners are the heart beat of the Centre that is then reaching out and drawing on the intellectual wealth in its host country and throughout the world.

WKC fosters research for health development through an innovative interdisciplinary and evidence-based approach; it provides a unique platform for exchanging experiences and information among leading policy decision-makers and experts. Through policy-relevant research WKC seeks to generate sound evidence and present it in a format that facilitates decision-making. A key vehicle for the international collaborative research activities is the organization of international forums. These are attended by leading decision-makers, professionals in the health and other sectors, academics, researchers and representatives of civil society. The international meetings and symposia are focused, have strategic agendas, and most are open to the media and the public. All bear witness to the fact that this type of close networking can nurture a professional and public demand for improved health and welfare services and stimulate innovative action.

Community involvement is a key ingredient and people must have access to reliable information. The WHO Kobe Centre will continue to collect and provide sound evidence for decision-making to leaders with respect to their health priorities, and particularly to support self-reliant health behaviour, including the control of tobacco use. We will support initiatives that strengthen the leadership of women so that they have greater influence. All groups, particularly young people, need to know the facts.

Premature death from smoking-related diseases shortens life with loved ones. Congenital malformations may occur in children whose parents smoke. Maternal smoking during pregnancy reduces birth weight and is the cause of other related problems. Mothers-to-be and their partners should therefore be a particularly receptive group. The side effects of smoking are also disturbing. For example, the risk of a young child coughing or developing bronchitis is greatly increased when the child inhales smoke from the air in the home.

We have therefore to work together upstream and be innovative leaders each in our own field for a common cause—improved health and well-being for all people, which in turn is one of the principal pillars of peaceful coexistence.

This is a gathering of scientific and technical experts. I very much look forward to hearing about the outcome of the research in different areas relevant to tobacco control. I am also interested to hear the professional insights of the representatives of the United Nations system organizations and I wish all participants every success in your deliberations.

Thank you very much for your attention.

Message from the Governor of Hyogo Prefecture, Japan

Mr Toshizo Ido
Governor of Hyogo Prefecture
Japan

It is my great pleasure to have the International Meeting on Economic, Social and Health Issues in Tobacco Control held in Hyogo Prefecture, Japan. This meeting is extremely important because it combines the Task Force members selected from the World Health Organization (WHO), the Food and Agricultural Organization of the United Nations (FAO), the International Labour Organization (ILO), and the World Bank with many interested policy-makers and experts from around the world. On behalf of the people in this region, I would like to extend my heartfelt welcome to all of you who have come all the way to Hyogo to participate in this event.

Hyogo Prefecture is often described as "Japan in Miniature" because of its rich variety of climatic, geographical and historical features. These features are fully taken into account in our approaches toward improving inter-regional and inter-cultural communications that extend beyond the boundaries of nations. These aspects also provide the basis for our attempts to take a lead in Japan's international contribution in various fields such as disaster management, environmental conservation and health and welfare promotion. By making these efforts, Hyogo plans to form an international economic and communication hub in the "Age of Great Exchange" and also achieve a society in which people of different cultures will be able to live in harmony. In light of this, I hope that you will join us in our mission.

According to WHO, approximately 4 million people die from tobacco-induced diseases every year. This number is expected to rise to 10 million in the year 2030, making tobacco-induced diseases a major cause of death. For this reason, WHO regards tobacco control measures as a priority in promoting public health. Since 1998, it has been implementing the Tobacco Free Initiative, based on the proposal of Dr Gro Harlem Brundtland, Director-General of WHO.

This meeting, which forms an integral part of the global strategies for tobacco control, will not merely direct attention to tobacco's adverse effects on health. Discussions will also focus on a wide range of related issues: protection of tobacco producers and companies, employment in the tobacco industry, tobacco smuggling as well as privatization of tobacco businesses and its impact on the economy and public health.

Hyogo Prefecture assists individual residents in improving their health through the Healthy Hyogo 21 Project. In concert with this, a public campaign is underway whose slogan is "Stop Smoking: Care About Your Family and Friends." Efforts are being made to increase general awareness of tobacco's adverse effects on health, dissuade children from smoking, create separate smoking areas within public facilities and workplaces, and to promote programmes to help people to stop smoking. By doing so, Hyogo ultimately aims to release people from the harm of tobacco and hopes that these meetings will give momentum to strengthening regional tobacco control measures.

In closing, please accept my best wishes for active discussions that will bring about a fruitful outcome to these meetings.

Welcoming remarks

Dr Vera da Costa e Silva
Project Manager
WHO/TFI

It is my privilege to welcome you to the International Meeting on the Economic, Social and Health Issues in Tobacco Control. This meeting, jointly organized and hosted by the World Health Organization's Kobe Centre and the Tobacco Free Initiative, comes at a critical point in global tobacco control efforts.

As you know, the WHO Member States are in the process of negotiating the Framework Convention on Tobacco Control (FCTC), the world's first set of legally binding rules to address a public health catastrophe that affects all countries and peoples in the world. Fifty years ago, epidemiologists established the causal relationship between tobacco use and death and disease. Today, tobacco kills 4.2 million people a year. In the next 25 years, that death toll will rise to 10 million. Every tobacco-related death is preventable.

While the public health reality of the tobacco epidemic is the reason why our Member States have embarked on this historic FCTC journey, we are more than aware of the need to address issues such as employment, privatization and smuggling. We also know that simplistic arguments conjuring up doomsday scenarios of tobacco control leading to massive unemployment, loss of revenues for governments or increased smuggling have been perpetuated by interests seeking the FCTC's failure. I hope the meeting in Kobe will examine these and related issues in the light of new scientific and economic evidence and clear the air once and for all.

The FCTC process has shown us the way forward and I welcome an active and genuine exchange of views over the next few days.

This meeting represents a major advance in global tobacco control. I wish to thank Dr Yuji Kawaguchi, Director of the WHO Kobe Centre for Health Development and the hard-working staff of the Kobe Centre for making this historic consultation possible. Finally, I would like to welcome our colleagues from:

- Our sister United Nations agencies, including Department of Economic & Social Affairs of the United Nations (ECOSOC), the Food and Agriculture Organization (FAO), the International Labour Office (ILO), the United Nations Children's Fund (UNICEF), the United Nations Environment Programme (UNEP) and the United Nations International Drug Control Programme (UNDCP).

I would also like to welcome:

- The World Bank;
- World Customs Organization;
- European Anti-Fraud Office of the European Community (OLAF);
- Caribbean Community Secretariat (CARICOM);
- International Food Policy Research Institute (IFPRI);

- Rockefeller Foundation;
- the experts who have travelled from all corners of the world; and
- the observers from various Member States of WHO, including Brazil, Japan, the United Kingdom and Zimbabwe.

In closing, we in the Tobacco Free Initiative at WHO look forward to strengthening our collaboration with the WHO Kobe Centre, our partnership with our fellow United Nations agencies and the other organizations present in this meeting in order to advance a global multisectoral agenda for tobacco control.

Meeting summary

Meeting summary

Purpose and participants

Despite the health impact of tobacco use, strong action to control smoking—such as higher taxes, comprehensive bans on advertising and promotion, or restrictions on smoking in public places—has not been achieved out of concern that such interventions might have harmful economic consequences. In its 1999 report *Curbing the Epidemic, Governments and the Economics of Tobacco Control*, The World Bank examined the economic questions that policy-makers must address when contemplating tobacco control. The report demonstrates that the economic fears that have deterred policy-makers from taking action are largely unfounded. Policies that reduce the demand for tobacco, such as a decision to increase tobacco taxes, would not cause long-term job losses in the vast majority of countries, nor would higher tobacco taxes reduce tax revenues; rather, revenues would climb in the medium term. Such policies could, in sum, bring unprecedented health benefits without harming economies. However, with respect to the countries whose economies are dependent on tobacco production, while reductions in domestic demand would have little impact, a global fall in demand could result in job losses. Policies to aid adjustment in such circumstances would be very helpful.

With this scenario in mind, the Tobacco Free Initiative (TFI) of the WHO began addressing the tobacco control policy's multisectoral and international perspective through establishing the United Nations Interagency Taskforce[1]. After these agencies conducted research in their various areas of concern, the need for a meeting that would deal with issues related to the impact of tobacco control policies on the different sectors of the economy was clearly stated.

The International Meeting on Economic, Social and Health Issues in Tobacco Control, organized by the WHO Centre for Health and Development (WHO Kobe Centre: WKC) in close collaboration with the WHO Tobacco Free Initiative (TFI), was held in Kobe, Japan on 3–4 December 2001. The meeting aimed to:

- Explore the employment implications of tobacco control in the agriculture and manufacturing sectors. Specific emphasis was given to alternative livelihoods for tobacco farmers and workers, including a review of alternative crop opportunities and the infrastructure required to move to alternative crops or economic livelihoods;
- Examine the employment implications of tobacco control in the manufacturing sector, including a review of the size and significance of the tobacco industrial sector in the overall economy, a review of alternative opportunities and an examination of other sectors where similar disinvestment occurred;
- Study issues related to the contraband of tobacco products and its indirect effect on human health;
- Look at guidelines for privatization and impacts accrued from privatization;
- Update the research agenda developed by Research for International Tobacco Control (RITC) and the World Health Organization in July 1999.

The meeting provided a review by international experts of the ongoing United Nations work in the area of international tobacco control, including work by the Food and Agriculture

Organization (FAO), the International Labour Office (ILO), The World Bank and the World Health Organization (WHO). The meeting also gathered international technical experts from 24 different countries[2].

Agenda

Monday 3 December

Opening Session: Introduction and welcoming remarks

- Dr Yuji Kawaguchi, Director, WHO Kobe Centre
- Mr Toshizo Ido, Governor of Hyogo Prefecture, Japan
- Dr Vera da Costa e Silva, Project Manager, WHO/TFI

Session 1: Burden of disease and effective tobacco control interventions

The following session presents a summary of the burden of disease worldwide and reviews the various effective tobacco control interventions that many governments must take into account in order to reduce tobacco consumption. In addition, the meeting's objectives were highlighted.

1.1 Current and future tobacco burden of disease (Vera da Costa e Silva, WHO)

Along with HIV, cigarette smoking is the largest growing cause of death in the world. Estimates show that tobacco caused 4 million deaths a year in 2000, a figure that is expected to rise to some 8.4 million in 2020. The spectacular rise in and spread of tobacco consumption around the world presents a challenge for governments and international organizations, and more specifically WHO. Governments can intervene by implementing effective measures, which evidence from many countries shows exist and are highly cost effective. Raising taxes on cigarettes and other tobacco products is probably the single most effective measure, especially in encouraging young people and those with limited incomes to reduce their use of tobacco products. There are other effective measures, namely non-price measures such as smoking restrictions, advertising and sponsorship bans, smuggling measures, treatment for tobacco dependence (e.g. therapies like nicotine replacement), information and advocacy.

In addition to the national approach (e.g. legislation and economic policies, surveillance, media and advocacy and health systems), an international tool has become necessary. The Framework Convention on Tobacco Control (FCTC) is an international legal instrument that aims to circumscribe the global spread of tobacco and tobacco products. The FCTC addresses issues as diverse as tobacco advertising and promotion, agricultural diversification, smuggling, taxes and subsidies.

The presenter also spoke about the myths that exist in policy-makers' minds that prevent them from taking effective actions towards tobacco control. Among those myths, is the notion that the price increases will generate a loss in government revenues or that the implementation of tobacco control policies will generate massive job losses. Evidence shows that if tobacco control policies are well implemented, the consequences will not be as dramatic as some like to think. For example, it has been proven in many countries that the increase in taxes will increase government revenues. In addition, for consumption to

decrease and hence cause a reduction in employment, the per capita reduction would have to offset projected increases in global population and income. It is therefore unlikely that significant numbers of tobacco-related jobs will be lost in the coming years, rather, it is likely that fewer new ones will be created.

Finally, the speaker presented the expected outcomes of the meeting: updating the research agenda, assisting in developing programmes that consider the supply-side implications of tobacco control and providing a review by international experts on the ongoing United Nations work in the area of international tobacco control. The conference output would be reported in the Secretary-General's report to the Substantive Session of ECOSOC (July 2002) of the United Nations Ad Hoc Interagency Task Force on Tobacco Control.

1.2 Effective demand-side interventions to reduce tobacco use (Joy de Beyer, WB)

The presenter discussed demand-side interventions to reduce tobacco use and outlined price and non-price measures that are effective for tobacco control. Among those measures are tax increases. In South Africa, for example, price increases decreased consumption. Between 1993 and 1999, cigarette real prices increased by 84.8% while cigarette consumption decreased by 22% in the same period. Other measures are advertising bans (a survey done in 102 countries shows that advertising bans do decrease cigarette consumption), bans on smoking in public places or helping smokers who want to quit.

On the other hand, most supply-side measures are not effective at reducing tobacco use (e.g. prohibition, youth-access restrictions, trade restrictions and crop substitution) except for the control of smuggling. Smuggling is said to be the consequence of the increase in prices. However, evidence shows that price is not the only reason for smuggling since it is more prominent in countries where prices are relatively low. Organized crime plays a major role in smuggling, hence the best way to resolve the problem is by tackling this organized crime.

Policy-makers worry that tobacco control will harm the economy since tobacco generates tax revenues, provides employment, could attract foreign private investment and generates export earnings. But facts and evidence show that tobacco control measures do not reduce tax revenues, do not necessarily increase smuggling (which depends on several determinants such as the level of corruption) and do not necessarily cause job losses (former smokers will spend their money on other goods and services, diverting money to other sectors and thus creating new jobs and new income opportunities). In order to successfully implement those measures, it is important to identify the key stakeholders, the issues that concern them and address these concerns and worries related to tobacco control measures. It is also important to tackle each country's unique characteristics. The change in tobacco consumption is very slow; the global tobacco market will not "wither away".

Comments and discussions

Some participants raised the issue that opportunities exist for tobacco control. In the area of youth and tobacco, much work has to be done in educational programmes in schools on the health consequences of tobacco use. Another area of concern would be harm reduction because of insufficient evidence showing the possibility of reducing the harm of tobacco. Tobacco product regulation needs to be addressed and agencies working on this issue must be

established. In the field of agriculture, studies should be expanded to counteract the arguments used by the tobacco industries aiming at weakening tobacco control policies.

Participants discussed price measures and demand reduction thoroughly. In middle- and low-income countries, many studies show that there is a high price elasticity of demand and a stronger reduction in consumption when real prices increase, thus, price measures in those countries can be very effective. Price increases are also a deterrent for young people who smoke or wish to smoke. Many studies, specifically in the United States, show that, even US teenagers who have considerable money to spend are very price sensitive. However, price measures do not affect the people who do not buy the cigarettes they smoke (e.g. children who take them from their parents, farmers who smoke home-produced cigarettes). In this case, information and advocacy and advertising bans are the most effective measures. Interventions from political leaders, community leaders or religious leaders can be very helpful in the process of changing people's attitudes.

Concerns about healthcare costs were also addressed. Studies demonstrate clearly that smokers cost much more in healthcare than non-smokers in the short run. However, research comparing the lifetime healthcare costs of smokers and non-smokers have reached conflicting results. It is not clear whether smokers, who die earlier than non-smokers and avoid expensive illnesses associated with old age, cost less for governments. Advocates and policy-makers, based on some studies, often use the argument that smokers do cost more than non-smokers in lifetime healthcare costs for their anti-smoking campaigns. But this argument raises some serious ethical problems and should not even be considered by policy-makers.

In terms of the United Nations Task force and the FCTC, a participant stated that not only ministries of health but also ministries of agriculture, industry and finance must be encouraged to work together in research to examine the topics of the economics of tobacco control.

Session 2: Supply-side implications from effective tobacco-control interventions

During this session, FAO's work in the area of international tobacco control was reviewed and out of it three main studies were presented. First, projections for tobacco production, consumption and trade for the year 2010 were summarized. Second, country-case studies conducted in five countries (China, India, Malawi, Turkey and Zimbabwe) that examined the economics of tobacco in each of them, were reviewed. And finally, a computerized general equilibrium model of four countries (China, Malawi, Turkey and Zimbabwe) that aimed to look at the consequences across the economy of a global drop in demand was presented.

2.1 An overview of FAO tobacco work: objectives and progress (Brian Moir, FAO)

The presenter offered an overview of FAO's work on tobacco. Launched in March 2000, the project is expected to be completed by mid-2002[i]. The major part of the agency's efforts in this area was reviewed during this session. The project's objective is to analyse the economic impact that may result from imposing measures to reduce tobacco consumption. Economic growth, GDP, employment, both in agricultural and non-agricultural industries,

[i] The completion of the project has been delayed until the first half of 2003.

household income, government revenue and food security are among the issues considered. First, to avoid repetition, as basis of the work, a complete review of existing literature relevant to the subject was done. Secondly, a set of projections was made on tobacco production, consumption and trade for the year 2010. Thirdly, country case studies were done in five countries: China, India, Malawi, Turkey and Zimbabwe, and a study on Brazil is still underway. Finally, computerized general equilibrium models of four countries (China, Malawi, Turkey and Zimbabwe) were prepared to get an idea of the consequences across the whole economy of a global drop in demand. Another project is expected to develop a summary, drawing together the results of each of these elements and reflecting the discussions and ideas that emerged at this meeting.

2.2 Tobacco leaf projections to 2010 (George Mergos, University of Athens, Greece)

This study provides an overview of the trends and determinants of tobacco leaf production, demand and trade and cigarette production from 1970–2000. It then provides projections of those trends for 2010.

In terms of the observed trends, tobacco-leaf production increased almost entirely in developing countries and has declined in developed countries. Production seems to have shifted to developing countries. Tobacco production revenue and tobacco profitability in most developing countries is higher than any other cash crop and thus there are good prospects for increasing production.

Evidence shows that the global demand in tobacco is increasing rapidly. In developed countries, there is a declining trend while in developing countries there is an increasing trend. The increase in consumption in developing countries is mainly due to a large growth in population and income. Cigarette production in developing countries is surpassing the production level of developed countries. As for the tobacco trade, in the past it was almost entirely in the form of tobacco leaf. Cigarette trade, however, has increased rapidly. More activity in cigarette manufacturing should be expected in developing countries and that will result in a more stable trade volume in both tobacco leaves and cigarettes.

Concerning the 2010 projections, global tobacco leaf production is expected to expand by about 20% more than in 1991. In developed countries, leaf production continues to decline and is expected to be about 8% lower than its level in 2000. In developing countries, it is expected to increase by about 20% more than its level in 2000. These trends show clearly that there will be a shift in leaf production from the developed to the developing countries. While demand is expected to increase, it reflects two different tendencies. In 2010 developed countries are expected to see the demand for tobacco products drop to about 6% lower than in 1998. The demand in developing countries, on the other hand, will represent an annual growth rate of 3.2% from 1998–2010. Tobacco leaf trade volume is projected to increase by about 1.5% per year from 1998–2010. In developed countries tobacco leaf imports will increase considerably while tobacco leaf exports will decrease. The inverse is expected in developing countries. The results also demonstrate that a slightly higher increase is expected in overall world import requirements than in export availability. This shows that the world level demand is outpacing supply. Public policy that aims to reduce tobacco use should thus focus on curtailing demand rather than reducing supply.

Comments and discussions

The presenter noted that the projections study worked on a very large number of countries (168). For simplification purposes and to ensure that results were more robust, the model was run with many countries put together in the same group. In future research, the major countries that have very different trends from the rest should be separated; this was done for China for example but it could be extended to other countries as well.

Regarding the data, the presenter pointed out that consumption was calculated from a supply utilization account so the work was done on apparent consumption and not actual consumption, which could lead to inconsistent conclusions as in the Chinese data, which show a decrease of consumption by 30% in 1998.

A participant noted that China will soon open its market to the rest of the world with its entry into the World Trade Organization (WTO). This fact could have a major effect on global trade and could change some results in the projections study, which did not consider this issue in its models (e.g. a decrease in prices and a higher increase in tobacco production and consumption).

2.3 Country case studies

2.3.1 China (Shangnan Shui, FAO)

This study offers an overview of the tobacco sector in China, the world's largest consumer and producer of cigarettes (accounting for over 30% of the world's cigarette production). China's central Government controls tobacco production, which contributes significantly to its revenue. The demand for cigarettes essentially determines the use of tobacco leaves. Over the last three decades tobacco production has been increasing and planting areas have been expanded. While not the most profitable crop in China, farmers use tobacco because there is no market risk: the only buyer is the Government and it guarantees them the price.

Tobacco control may increase income risk for tobacco growers in some regions but not for those who reside near urban areas. There, tobacco income accounts for much smaller proportions of the total household income and off-farm employment would offer alternative income opportunities. In terms of employment, tobacco is the most labour-intensive crop in China, though since it is a one-season crop only, there would not be a significant loss of labour use by shifting away from tobacco to other crops. Regarding Government revenues, if tobacco control policies increased tobacco taxes, the effect would depend on the complexity of the tax structure and on whether smokers would switch to "lower quality"[3] cigarettes as a result of a cigarette price increase.

China does not have an open economy and trade in tobacco leaves has not been a significant element in tobacco production during the past few decades. The country's recent admission to WTO may not have a significant effect on the Chinese tobacco industry because even if the tariffs on imported cigarettes are reduced, those cigarettes would still be high priced. In addition, imported cigarettes have different flavours and tastes from the ones the Chinese are used to, so it would be harder for them to switch to imported cigarettes.

2.3.2 India (Sat Pal Malhotra, Consultant, India)

The study reviews the status of the tobacco sector in India and attempts to identify the major economic and social factors affecting tobacco production and consumption.

India is the world's third largest producer of leaf tobacco. Bidi production accounts for over 50% of total tobacco use compared with less than 20% by the cigarette segment and accounts for about 40% of tobacco consumption. Cigarette smoking is essentially an urban phenomenon. It is estimated that Bidi manufacturing provides employment to over 4.4 million workers (full-time and part-time), a large number of whom are women and children. Tobacco in India yields higher net returns per unit of land than other cash crops and substantially more than food crops. Therefore, if tobacco farmers must switch to other cash crops, they will suffer an economic disadvantage. However, some studies revealed that mixed cropping was more profitable than exclusively tobacco cropping. Such inter-cropping systems may be the first step towards moving away from tobacco.

The Indian market for cigarettes and other tobacco products is highly price sensitive. However, concerning taxation, the Government's motivating rationale seems to be more fiscal than to control tobacco. For ease of tax administration, the narrow cigarette sector is taxed at an increasingly higher rate to meet revenue need, while as much as four-fifths of tobacco consumption, including bidis, is either lightly taxed or not taxed at all. If the objective is to discourage tobacco consumption, the existing tax base and rate structure is not aligned with production and consumption patterns. Government intervention for the support of the industry covers aspects like institutional and regulatory support, price and market support, export promotion, research and development and direct fertilizer and credit subsidies. The paper gives a broader explanation of Government interventions in the production of the Virginia tobacco type.

As for trade, tobacco exports are dominated by unmanufactured leaf. Exports of tobacco, along with other agricultural exports, receive different types of incentives. For example, income exports are exempt from income taxation. Credit at subsidized interest rates is available for tobacco exports. The country imports small quantities of unmanufactured tobacco required for blending purposes for manufacturing international cigarette brands in the country.

2.3.3 Turkey (Erol Cakmak, Middle East Technical University, Turkey)

This study provides an overview of the economics of tobacco in Turkey.

Turkey ranks fifth in tobacco production, contributing 4% of the world's production. The country primarily produces oriental tobacco, accounting for 65% of the world's oriental tobacco production. Production of Virginia and Burley amounts to little more than 3% of total tobacco production in Turkey. Of the total cultivated land, tobacco comprises about 1.5%. Being one of the most labour-intensive agricultural activities, tobacco production is an important source of employment. Tobacco production in Turkey is possible only in particular areas and subject to quota permits. The public sector plays a much bigger role in terms of employment in tobacco and cigarette manufacturing than the private sector, representing 78% of all tobacco processing firms. The activities of TEKEL, the leading public tobacco industry, account for some 3% of Turkey's GNP. Because of TEKEL's large market share and ties to

the Government, it acts as a price leader in the industry. Producers, as a last resort, can sell TEKEL their tobacco. Alternative crops to tobacco-growing exist but they are less profitable and thus call for substantial subsidies and income-support measures.

Regarding taxation, both domestic and imported cigarettes are taxed heavily, with domestic tobacco cigarettes subject to over a 200% tax. Tobacco is an important source of indirect tax revenue to the Government.

Tobacco consumption has increased by almost 2.5 times in the last 30 years and the average age for starting to smoke has been decreasing.

Regarding trade, Turkey has a share of 6–8% in total world exports (mainly unprocessed tobacco) and 2% in total world imports. The United States of America has the largest share in Turkish exports followed by countries belonging to the European Union (EU).

In terms of tobacco control policies, the Turkish Government could increase cigarette prices and import duties without necessarily affecting the economy negatively. On the other hand, it is paving the way for the privatization of TEKEL, which will lead to major changes in the tobacco sector.

2.3.4 Malawi (Shangnan Shui, FAO)

This study aims to identify the relationship between tobacco production and the economy in Malawi. Malawi's economy is predominantly agricultural, with over75% of the population living in rural areas. Agriculture distinguishes itself as the single largest sector in the national economy over the past few decades (38% of GDP) and tobacco is the biggest cash crop grown. The country is now one of the ten largest tobacco producers in the world. In early 1995 Malawi made structural reforms liberalizing the economy (including the tobacco sector, which had been tightly controlled by the Government) and facilitating the development of the private sector. Despite the fact that small growers are increasingly involved in tobacco production, estates still dominate production (68% of the total sales). Tobacco production is estimated to contribute to 6% of total GDP and 17% of agricultural GDP. However, lately, due to over expansion of tobacco production, the quality of leaf production has declined and, consequently, tobacco export prices as well. Tobacco production is heavily dependent on manual labour, employing 20% of the country's total labour force.

The domestic smoking rate is low and all cigarettes consumed are imported which means that all tobacco leaves are produced for export.

In terms of trade, Malawi is the fifth largest exporter of unmanufactured tobacco in the world, representing 6% of global tobacco exports. Exports of agricultural commodities are virtually the only source of export earnings and foreign exchange for Malawi's economy. In 1999, tobacco was by far the largest single export commodity accounting for 61% of the total export revenue. Since 1998 no export levy or tax has been imposed on tobacco. The largest revenue the Government collected from tobacco exports was achieved by imposing a tax on tobacco exporters' profit. Government revenue from this tax accounts for over 20% of total national tax revenue. Malawi's exports are price-competitive and a potential reduction in world tobacco prices would not affect its competitiveness.

2.3.5 Zimbabwe (Shangnan Shui, FAO)

Zimbabwe is one of the world's major tobacco exporters, with. tobacco accounting for more than 55% of the country's total agricultural exports in 1998. Among other export crops, cotton and maize experienced significant growth in export. Increases in both planting areas and yields have contributed to a major increase in output of tobacco in recent decades.

Two types of farmers are involved in tobacco growing:

- Large-scale farmers dominate tobacco production. The fewer than 2 000 commercial tobacco growers account for 87% of the area planted and 95% of the total crop. Although tobacco is still the backbone of commercial agriculture, other important crops for large-scale farmers (e.g. wheat, soybeans and maize) are typically grown in rotation with tobacco.
- Small-scale farmers are loosely defined as indigenous commercial farms. Small-holder farmers are marginally involved in the tobacco sector.

Although there are roughly eight times as many smallholder tobacco growers as commercial farmers, they account for less than 1.5% of all smallholder households.

Three main types of tobacco are grown in Zimbabwe: flue-cured, burley and oriental tobacco. Zimbabwe is the largest tobacco leaf producer in Africa and the world's fourth largest producer of flue-cured tobacco. Ninety-eight per cent of all tobacco production is exported. Tobacco production contributes significantly to GDP; total export revenue accounts for nearly 10% of GDP. Although other cash crops, including cotton and maize, are more important for most communal and resettlement farmers, tobacco is still significant and offers smallholder growers a unique opportunity for exceptionally high producer profits and excellent rates of return. Tobacco incomes accounted for some 25% and 40% of total income for large firms and smallholders, respectively. In addition, tobacco production generates considerable rural employment. Full-time employment, directly or indirectly, would be roughly equal to 5% of Zimbabwe's total labour force and perhaps 25% of formal employment. Regarding taxation, tax rates have been reduced each year since 1999 to encourage production. Nevertheless, tobacco is a major source of Government revenue. A reduction in tobacco demand would result in a decrease in tobacco exports and a decline in real GDP. However, even though tobacco plays an important role in the economy at both the national and sector level Zimbabwe's economy and agriculture are relatively diversified. A diverse agricultural structure and the commercial nature of large tobacco farms would allow Zimbabwe to reduce its dependency on tobacco relatively easily. Various types of technical and financial assistance to small tobacco growers would allow them to shift away from tobacco to other crops in the long run without any major reduction of income.

Comments and discussions

Arguments were raised concerning the studies of Turkey and China, in which it was noted that there has been a decrease in tobacco production over the last few years. The response was that this decrease could be explained by an excess in stock of low-quality leaves that the State Government had to buy to preserve the quota set for the quantity produced.

Some participants noted that in the studies of Malawi and Zimbabwe, it was shown that should there be a reduction in global demand, farmers would be able in the long run to shift to alternative crops. However, different elements should be considered to ensure a smooth transition. For example, in Malawi, small-scale farmers can only grow tobacco to make the best profitable use of their small land area. The alternative crops proposed, such as tea and sugar, are highly specialized and can only be used in large-scale commercial estates; they are not a direct substitute for small-holder tobacco. Other alternatives need to be found for them. In the case of Zimbabwe, note should be taken that many profitable crops are grown from the revenues of tobacco; tobacco helps in the process of diversification. Those crops also require large-scale lands and heavy investment.

As for the India study, it was noted that virtually all of the discussion about the impact of Government policies on tobacco production centres on the experience with Virginia-type tobacco, even though this accounts for only 24% of total tobacco production. One can understand the logic of covering the Virginia-type of tobacco, given that the Tobacco Board has put in place an array of regulations dealing with the marketing, pricing, and exports of that type of tobacco. However, it is not clear why there has not been a discussion on the effects of Government policies on the production of the other types of tobacco, which comprise 76% of the total.

It was also pointed out that the India study uses an array of data to try gauging some direct effects of farmers shifting from tobacco to crops that give the 'next best return' in different locations. It examines the effects on income and labour requirements and makes a link to potential changes in consumption patterns as a result of the income changes. This provides some interesting hypothetical results, especially the seemingly dramatic adverse effect on the demand for hired labour. One would have liked to see the same type of analysis done based on an assumption that farmers would move from tobacco to a tobacco and other crop inter-crop (given the demonstrated high returns of such a cropping pattern) rather than the full replacement of tobacco with the 'next best' crop. The drop in (hired) labour requirements would presumably be much less significant. This issue, while mentioned in the India paper, was not developed.

2.4 Computable General Equilibrium (CGE) studies (Xinshen Diao, IFPRI, the United States of America)

This study reports the results of comparative static experiments in which the model is "shocked" by changing some exogenous variables in a specific economy and then the changed equilibrium solution is computed. The General Equilibrium analysis of tobacco was done on four developing countries: China, Malawi, Turkey and Zimbabwe. The simulation focused on the possible reduction of tobacco production and exports along with its impact on the rest of the country's economy due to declines in world tobacco prices or changes in domestic tobacco policies for example.

China

Tobacco production represents 0.5% of GDP, 1.5% of total agriculture, and tobacco exports are very small; thus, a decrease in world tobacco prices would not affect the quantity of tobacco exports. Another scenario would be to see the effect of an increase of cigarette consumption taxes of 10% up to 30%. An increase of taxes of 30% would lead to a decrease of consumer's demand of 9% (assuming a price elasticity of –0.4), a decrease of tobacco

products output of 1.9% and an increase of total Government income of 5%. A third scenario was studied when cigarette prices were being raised. An increase of 30% in cigarette prices would lead to a reduction of 0.02% in demand, an increase of tobacco product profits of 116% and an increase of total Government income of 1.9%.

In the case of cutting low-quality cigarette production, for example a decrease in 50% of the production, demand for tobacco products would fall by 11%, demand for low-quality products would fall by 70% while for the high-quality products it would rise by 43% only and total Government revenue would rise by 0.6%.

Malawi

Tobacco production represents 14.4% of GDP, 17% of total agriculture and tobacco exports represent 50% of total exports. If the export price is reduced by 40%, for example, this would lead to a 43% fall in total tobacco production and a 66% fall in tobacco products value. Also, the demand for labour in tobacco production would fall by 90% among the small holders and by 76% among large-scale producers. Assuming the possibility of labour adjustment, if the export price were reduced by 40%, the real exchange rate would depreciate by 21.3% and GDP would fall by 1.8%. However, total Government revenues would rise by 1.5% because the Government's revenue is based on domestic currency and, as the foreign transfer accounts for more than 20% of the Government's total revenue, the domestic currency depreciation would allow the Government's income buying power to increase. Another explanation is that the tariff revenue calculated by the domestic currency would also increase due to the depreciation. Alternative crop production would rise, primarily tea followed by maize and sugar. To reduce the risks resulting from such changes in export prices, Malawi needs a more diversified and flexible export structure.

Turkey

Tobacco production represents 1% of GDP, 1.5% of total agriculture and tobacco exports represent 2% of total exports. Exports of unprocessed tobacco products would decline by 34% and production would contract by 14% if the world price fell by 40%. Since tobacco exports only account for 2% of total exports, decline in the world tobacco price would not generate a strong impact on the Turkish macro economy. A decrease in tobacco prices by 40% would result in an increase in exchange rates of 0.17%. It would result in an increase in the CPI of some 0.13%, a rise in exports of about 0.08%, a decrease in imports of 2.12%, an increase in Government revenues of 0.243% and it would not affect the GDP. Another scenario would be to simulate an increase in cigarette sales tax. For example, an increase of 30% in cigarette sales tax would result in a drop of 6% in demand, a 30% increase in spending, a decline of 1.5% in tobacco output and an increase of 2% in unprocessed tobacco products. A final scenario would be to reduce the rate of subsidy of 10% of the value of the inputs employed by tobacco production. Supply of tobacco would thus fall by more than 5%. This effect is higher compared to the scenario where the world tobacco price decreases by 10% (which causes a decrease of less than 5% of the supply of tobacco).

Zimbabwe

Tobacco production represents 7% of GDP, 43% of total agriculture and tobacco exports represent 35% of total exports. The study shows the effect of a decrease in worldwide tobacco prices, the decrease is from 5% up to 40% of the base price. In the case of a decrease

of 40% in the worldwide price of tobacco, the labour demand in tobacco production would decrease by 26%. The wage rate for unskilled labour working in the large-scale farming sector would fall by 25%. However, the wage rate for skilled labour would only decline by 5%. More than 60% of unskilled workers released from tobacco production would be hired by other crop production. The small farmers would only be indirectly affected by the decline in worldwide prices, thus the effect would be quite small. While tobacco production falls, production of other crops would rise; mainly sugar, cotton, coffee and maize. A decrease in the worldwide tobacco prices of 40% would also lead to an increase of 15.6% in the exchange rate, a decrease in GDP of 4.5%, an increase in exports of 1.4% and an increase in the Government's revenue of 0.9%.

Comments and discussions

The presenter pointed out that there is a major difference between the projections methodology and the simulations methodology in the CGE model. In terms of projections, the price is given and, based on changes in population, income or technology, projections are made on the change in supply. Simulations in the CGE models do not include dynamic factors; with a given income, a given population or a given technology, the study calculates the effects of a change in price on supply.

A participant raised the point that the CGE models of this study look at the effect of a decrease in world prices of tobacco, a consequence of a reduction in global demand, but the projections predict an increase in demand for the following decade. The two studies go in two different directions. The FAO responded that this is because the projections were started a while after the CGE studies were initiated, thus CGE models did not take into account the projections study conclusions. FAO will integrate those different aspects of its project into the final draft.

FAO also noted that the CGE studies failed to take into account the switching costs farmers would incur should tobacco supply be reduced as a result of a drop in worldwide tobacco prices. This is a result of a lack of data, which are hard to obtain when conducting surveys since farmers are reluctant to provide this sort of information. However, the quality of these data needs to be developed to build realistic models.

A participant argued that the scenario highlighting a reduction of 40% in the price of tobacco is unrealistic. It would be more rational to consider a reduction range of 10-20%. However, this large price decrease should be considered at a national level and not at the global one. Some countries like Malawi or Zimbabwe have experienced such a decrease in the past. This reduction is not only determined by a decrease in global demand. Many other factors at the national level (transport costs, processing factories, various tariffs in the region, etc.) play an important role as well. Thus, it is essential to separate out the decrease in global demand from what could happen at the national level.

Another participant questioned the validity of the CGE model since structural changes in agricultural economy are based on short-run price volatility.

It was noted that the CGE study on Malawi posits a dualistic agriculture, consisting of "small-scale" and "large-scale" segments. A considerable amount of literature in the 1990s documented the transformation of this dualistic structure into a broader continuum. It is more accurate to describe the sector as consisting of smallholder farms (generally <2 hectares),

medium-scale farms (generally 5 to 20 hectares), medium-scale estates (generally 30 to 60 hectares), and large-scale estates (100 hectares +). These compete for labour and at least the first three categories have operated in intertwined land and capital markets. This goes against some of the model's simplifying assumptions.

Some participants observed that all the above studies show that tobacco is a very profitable crop but those countries that depend on this crop are still very poor. Even if they continue just growing this crop will they be able to improve their economy? That is why it is also important to consider crop diversification. Governments should find ways to facilitate the process of switching and not to control the process because farmers are perfectly capable of switching to other crops based on market realities, and in this regard they are far ahead of policy-makers.

2.5 Further research issues and policy implications (Brian Moir, FAO)

The presenter summarized the major conclusions from the studies presented during this session and the issues that needed further discussion.

The projections work first outlined the global trends of tobacco production, consumption and trade. Production in developing countries accounts for 70% of global production and is very largely dominated by China. Regarding exports, developed countries play a bigger role than for production but developing countries still dominate. The United States of America is the biggest exporter. The projections show what might happen in the absence of a significant change in global policies by 2010. Production and consumption are expected to rise, increasingly dominated by developing countries. Trade is also expected to increase, developing countries will export more, whereas developed countries will import more tobacco products.

The presenter explained the assumptions behind the CGE modelling. The methodology does not incorporate dynamic elements and no assumptions are made about the time period during which weakening in demand might take place. The CGE modelling does not incorporate any specific adjustment mechanism; based on one equilibrium, it simulates what a new equilibrium might be.

The studies' general conclusions show that, while reduced demand could negatively affect some developing countries that rely heavily on tobacco, and while the impact on some farmers could be serious, the overall impact at the national level will probably not be catastrophic, assuming that adjustment is possible in these countries. In economies with more diversification, the implications of a weakening in demand for tobacco would be less serious. In China, farmers have alternatives to tobacco and will not lose much of their profitability by switching to other crops. However, the Government revenues are likely to suffer from a decrease in the price of tobacco leaves. In India, there are some divergences between the different studies already undertaken but they somehow show that there will be considerable loss in farm income by growing other crops. Malawi has fewer crops to diversify, alternatives exist but they provide smaller returns to producers. Should global tobacco markets contract, production would decrease. But Malawi and Zimbabwe would continue to supply the world market and they will keep their comparative advantage.

Since an increase in the supply of other crops would make their prices fall, the challenge is not only to find alternative crops but also a market that can absorb a major increase in their produced quantities.

It is important to note that it is very difficult to model the impact of new policies that are not yet clearly defined. Once scenarios defining those policies become clear, a previously conducted analysis can be revised. It would reveal more useful results and better demonstrate the implications of these policies in a specific economy. Researchers should look in more detail at what the adjustment process would be in specific countries in response to those new policies. Then, they should try to find what sort of assistance would be needed for those countries that will suffer from a reduced global demand in tobacco. However, they should bear in mind that it is also important to consider the full international dimension in agricultural pricing in the case of a decrease in tobacco prices; it would be difficult to suggest alternative crops if the markets for these crops are distorted by subsidies elsewhere.

Tuesday 4 December

Session 3: Employment issues in tobacco manufacturing

The first part of the session focused on ILO's work in international tobacco control. A study looking at employment in the tobacco industry was summarized and there was an overview of two studies on employment in the bidi industry in India. In addition, the ILO gave a presentation on its work for a smoke-free policy in the workplace.

During the second part of the session, five country-case studies (Armenia, Bulgaria, Egypt, Kenya and Viet Nam), evaluating the impact of tobacco control policies on employment, were reviewed.

The World Bank prepared a toolkit on employment to help economists examine the effects tobacco control policies might have on employment. In particular, this toolkit provided information on how to use the "Input-Output" analysis to evaluate the tobacco control impact on employment and how to make projections of hypothetical/real tobacco-control-policy scenarios and projections of its impact on employment. This toolkit was used in some of the country case studies.

3.1 Employment trends and prospects: the world tobacco industry (Gijsbert van Liemt, ILO)

The presenter provided a brief overview of world trends in the different types of tobacco production, the main producers, exporters and importers. He also showed the different strategies that tobacco industries have been pursuing lately in response to the slow down in demand growth: consolidation (merging, concentration), diversification and increase in productivity. Tobacco industries also must deal with litigation and hire top lawyers to defend them in the numerous lawsuits from plaintiffs suffering from the detrimental effects of tobacco use. Governments' actions regarding tobacco control were described. Governments face a dilemma: on the one hand, tobacco growing and processing can contribute positively to employment, tax revenue and foreign exchange receipts. On the other, they are obliged to protect the population's health; and treating people for smoking-related illnesses is very expensive. Governments try to limit tobacco consumption by setting rules that ban smoking in public places, prohibiting the sale of tobacco products to young people, banning advertising or raising awareness among people on the dangerous effects of smoking.

Governments also increase taxation on tobacco products. This policy can reduce tobacco consumption and raise Government revenues. But some argue that this policy could have certain adverse consequences. This tax could act as a regressive tax as it weighs more heavily on poorer people. Finally, increased taxes could encourage smuggling. Regarding employment, there has been a downward trend in employment in cigarette manufacturing in the last decade and it appears that this will continue for the coming years. This could be explained by the slow demand growth, privatization, trade and capital liberalization (which put pressure on manufacturers to improve efficiency and thus contribute to reduced employment) and the tobacco industries' new strategies, which seek consolidation and higher productivity.

Comments and discussions

It was pointed out that information should be updated as much as possible. The paper is talking about tobacco manufacturing in the 1990s, thus some information seems to be needlessly out of date.

A participant argued that the discussion on smuggling did not mention the highly publicized role that manufacturers have played.

Though it would be very difficult to isolate the effect that demand reductions have on tobacco employment, it was remarked that the paper attempts to explore this issue. For example, consolidation in the tobacco industry, as explained in the paper, has resulted in, *inter alia*, economies of scale, increased productivity, and in turn, reduced employment. However, to what extent has consolidation occurred as a result of increased tobacco control? Is this consolidation due solely to trade liberalization and privatization? These are important questions that should be posed and explored.

A participant noted that the study seems to suggest that most governments use fiscal policy ("raising tobacco taxes") to reduce tobacco consumption. Although it is true that an increasing number of governments are beginning to use fiscal policy to reduce the demand for tobacco products, it is incorrect to state that most do. Real tobacco prices have failed to rise in many countries in recent years. In addition, the discussion on taxation is over-simplified and misleading. Most consumption taxes are regressive. However, changes in taxes may not be regressive and can even be progressive. World Bank studies show that many poor households devote quite significant proportions of their expenditures to tobacco products, which has a very high opportunity cost, given high levels of malnutrition and other pressing family needs. Analysis has also shown that tax increases would not greatly increase the tax burden on these poor households, because they tend to cut back their tobacco consumption in response to price increases much more than higher-income households, and thus would also benefit strongly from reduced levels of risk to health.

Another participant highlighted again the argument in the presentation stating that taxes on tobacco products could act as regressive, weighing more heavily on poorer people. The participant noted that reluctance to increase the tax incidence on low-income consumers would lead governments to increase taxes on relatively expensive tobacco products (manufactured "white" cigarettes) more than on cheaper products (e.g. bidis) that are consumed mostly by poorer people. The resulting increasing price differentials will cause some people to switch to relatively lower priced products, rather than quit or reduce their consumption. Although intended perhaps to shield poor consumers from harm, this may have

the opposite effect, because smokers who are encouraged to quit by higher prices will reap double benefits: the benefit of being able to switch their expenditures from tobacco, a harmful product, to other goods and services, and the important health benefit that comes from quitting. A smoker who quits quite quickly reduces the risk of tobacco-related diseases.

Furthermore, a participant added that the discussion ignores the effect that tax increases have on the prevalence and initiation of tobacco use. The discussion should also make mention of the benefits of cessation.

3.2 An overview of the bidi industry in India: the scenario in selected states (Clara Foucault-Mohammed, ILO)

This study was commissioned to look at the vulnerable group of bidi workers and their work conditions, and to map out ways in which these conditions can be redressed. Tobacco control and its impact are referred to in the study but in an empirical manner; they are not scientifically supported. The study focused on four states in India: Madhya Pradesh, Gujarat, Kerala and Andhra Pradesh. These four states were selected based on the existence of the following criteria:

- a high concentration of bidi workers;
- advancement in employment diversification;
- some empirical evidence of a decline in the industry; and
- areas where a convergence of factors would allow for follow-up work and speedy results that would benefit displaced workers within the short- to medium-term.

The study merges a desk study, where the data are taken from the Ministry of Labour figures and a field study based on a state-by-state analysis of working and living conditions, declining employment and issues related to diversification. The data state that there are 4.5 million workers in the bidi industry and there is a preponderance of women assisted by child workers (children account for 11% of total workers). The bidi industry absorbs 93% of employment in the unorganized sector of the tobacco industry. But since home-based workers are difficult to identify, these data are underreported.

The findings of the field study conclude that the principal cause of decline in employment in the bidi sector is:

- competition with other tobacco-based products (mini-cigarettes, chewing tobacco);
- competition among bidi brands;
- relocation of plants due to lower wages or lack of implementation of labour laws; and
- influx of migrant workers.

Bidi is perceived as a low-class product smoked by the poor. New generations coming from a bidi-worker class that is more educated are unwilling to continue bidi work and many of them have relocated into construction, transportation, street vending or have opened small commercial stores. A number of exploitative practices coming from employers are found in this sector. But surprisingly, this unorganized sector seems to be a highly regulated industry (see for example the Beedi Workers' Welfare Fund[4] of 1977). The real issue would be to find a way to extend workers rights to all people.

3.3 Alternative employment for bidi workers in India: an action project (Arun Kumar, ILO)

The bidi industry in India is an agro-forest industry spread over the entire country. It accounts for 50% of tobacco consumption and it employs 90% of home-based poor women. The sector is mostly unorganized but strong trade unions exist. The Beedi Workers' Welfare Fund established in 1977 covers about 3.7 million workers. It provides healthcare, maternity benefits, education scholarships for children, group insurance, water supply and sanitation, housing schemes and recreation. Unfortunately, many women do not have access to this fund because they were refused identity cards. Women in the bidi industry also face other problems. They only work several days a week and receive less than the minimum wage; they face health problems probably caused by the production of bidi; they are not organized, don't have access to social security and can't find alternative means of a livelihood. The ILO is working on a project to promote "decent work" opportunities for women bidi workers in India by supporting the national efforts to improve the welfare of poor families and promoting supplemental income and employment opportunities for women in areas where bidi work is declining. This project has a three-phase strategy. The first one works on organizing, training and capacity-building of self-help groups of bidi women and nongovernmental organizations (NGOs) towards initiation of income-generation activities. The last two phases will set up a Revolving Fund, promote select economic activities and build institutional linkages for self-sustenance of pilot initiatives. The project is in phase one and the expected difficulties are in finding alternatives, improving organization in the sector and encouraging entrepreneurship and other skills.

3.4 Smoking in the workplace: an occupational hazard (Carin Hakansta, ILO)

The presenter briefly explained the work of the ILO's Occupational Safety and Health department. The group, among other tasks, is concerned with promoting a healthy workforce in a healthy workplace. It focuses on protecting workers from environmental tobacco smoke by eliminating all tobacco smoke in the air. Passive smokers run serious health risks: the Environmental Tobacco Smoke (ETS) can cause various types of cancer, heart problems, lung diseases and stroke.

In many workplaces, tobacco smoke may aggravate already hazardous working situations. In other words, already carcinogenic chemicals become more hazardous to health when interacting with tobacco smoke. This is the case for people working in coal mines, wine production, rubber and petroleum industries, agriculture, the textile industry, construction, carpentry and the furniture industry. Tobacco growing and processing also involves health risks. Tobacco smoke is not only a health risk, it is also the leading cause of fires and explosions at work. It is a major factor in motor vehicle accidents and causes burns and reduced visibility.

Employers should take the problem of smoking at work seriously because it implies a loss of productivity and competitiveness. This consequence can be explained by the fact that smokers spend a lot of time away from their workstation to smoke, have higher rates of sick leave compared to non-smokers, their healthcare costs are higher, their smoke can lead to accidents or fires, and costs of maintenance increase. To implement a smoke-free policy, the employer should make sure that the policy's coverage is comprehensive, encourage social dialogue, provide education and training on hazards of tobacco smoke and also provide smoking cessation support.

Comments and discussions

A question was addressed regarding school attendance for the children of bidi workers. One of the presenters replied that the above studies report that 90% of these children attend school. However, girls are more likely to suffer from lack of education as a result of helping their parents with bidi rolling. The Beedi Workers' Welfare Fund provides scholarships to send bidi workers' children to school and mothers usually try to have a scholarship for at least one of their daughters.

Defining the bidi industry as unorganized but also organized and regulated seemed to be unclear to a few participants. One of the presenters argued that it appears that this industry is unorganized in terms of the workers since very few are unionized but in terms of production, it is highly organized. In terms of regulation, the legislation is in place but whether it is enforced is another matter.

The bidi industry employs 4–5 million persons. A participant noted that this number seemed quite large when compared to the biggest cigarette factory in Europe, based in the Netherlands, which employs 2 000 persons. It was argued that this is because bidi is very labour intensive, especially because the Government does not encourage the mechanization of this sector. If this sector were mechanized, the excise duty on those produced bidis would be very high and they would no longer be profitable.

A participant noted that the studies on bidi stated that there was a lack of alternative, which could seem incorrect when looking closely at evidence. Evidence shows that in some regions of India bidi producers were able to diversify (by producing for example pickles) and thus make more profits than when they only produced bidis. The alternatives are difficult to find but they do exist.

3.5 Country-case studies on employment issues in tobacco manufacturing

3.5.1 Armenia (Ashot Kurshudyan, ICHD, Armenia)

The Armenian tobacco industry was completely ruined after the collapse of the Soviet Union. Since that time, it has begun slowly building up. The share of tobacco farmers in total farming was 5.72% in 2000. Although the tobacco sector does not have a significant share in agriculture it is growing and this trend is expected to continue in the future. In the leaf marketing and processing sector, only one company that employed 800 persons in the year 2000 is active. In the cigarette-manufacturing sector, tobacco industry employment constituted 0.067% of total employment in 2000. In the cigarette wholesaling and retailing sector, the total number of employed persons was estimated at 1 661.

There is still no regulation in the tobacco sector in Armenia; a draft law is now prepared to strengthen the control over tobacco use. However, there is a taxation structure and it is stricter in the tobacco sector than in the others. The total tax revenues from tobacco constituted 11% of the budget tax revenues. In estimating the possible impact of a tobacco control policy on overall employment, the input–output analysis cannot be applied due to the lack of statistics in Armenia. Because of certain tobacco industry specifications in the country (a small number of companies engaged in the business and the tobacco production sectors not being interrelated with other branches of the industry), the consequences of tobacco control can be easily estimated.

If the Government decided to impose smoking restrictions and to increase taxes by 10%, then a reduction of the demand for the locally produced cigarettes is estimated to be 9%. How would this affect employment? In tobacco farming, the reduction in demand would hurt living conditions of about 1 800 farmers but would not create unemployment. Alternatives also exist for farmers who could produce juice and canned goods as well as several types of vegetables and fruits. In the leaf and marketing processing, it is estimated that 65 persons will lose their job, which is a very small number compared to the overall labour force. In cigarette manufacturing, the manufacturing process is based on a developed technology and the salaries in this sector are low compared to the other sectors. The profitability of this sector is high and the companies are not likely to reduce their labour force because it is not a serious burden for them. Therefore, less than 100 people are expected to lose their jobs in cigarette manufacturing. In the wholesale retail trade, retail traders are expected to be more mobile than wholesalers. Therefore, the result of a 9% demand reduction will not dramatically affect employment in this sector. The tobacco industry is not yet developed enough to be considered as a key industry in the economy.

3.5.2 Bulgaria (Roska Ivanova Petkova, Bulgarian Academy of Sciences, Bulgaria)

Bulgaria experienced a major economic crisis in the 1990s, which has aggravated all economic sectors. Tobacco production has declined by almost three times in the last decade and the same phenomenon holds for cigarette production. Thus, the supply side of the tobacco sector is different from other transitional and developing countries. There has also been a sharp decline in employment by approximately three times. The reduction in tobacco production and employment is mainly due to the process restructuring and economic crisis of the 1990s. There has been an increase in the general unemployment (the official unemployment rate was 16% while the real rate was over 25%) as a result of the collapse of the biggest industries. Regional unemployment in the tobacco sector is the country's highest priority. The most vulnerable regions to employment reduction in tobacco are those where the mining industry and the other branches of heavy industry have been developed as an alternative to the tobacco industry in the past.

This regional unemployment especially affects ethnic or minority groups. The main tobacco growers are Muslims and they are concentrated in those economically vulnerable regions where unemployment sometimes reaches 80–90% of the population. These growers can hardly find an alternative livelihood. The forthcoming privatization of the cigarette industry, where certain big transnational companies are the potential buyers, will also negatively affect the employment sector.

Bulgaria has already experienced a major reduction in tobacco production and employment and should there be another such reduction it could lead to political and social tensions. If we consider a reduction in tobacco consumption due to a reinforcement of tobacco control policies (such as increasing tobacco product taxes), based on the input–output analysis, it is expected that employment in the tobacco sector will be reduced and the employment in the other goods and services sector will rise but the overall effect will be reduced total employment. However, this reduction will not be significant. The strategy for a stable tobacco control policy has to be developed step by step, taking into account social concerns and possibilities for creating alternative forms of employment. The Bulgarian Government needs guidance in many fields of the tobacco control process where it does not have enough experience. For example, it needs assistance in combating smuggling, in

disseminating information on the health consequences of tobacco consumption and in protecting children and other risk groups.

3.5.3 Egypt (Heba Nassar, University of Cairo, Egypt)

Egypt has the highest rate of tobacco consumption in the Arab world and it is increasing. This could be explained by the decline of tobacco prices in real terms since 1993, by the improvement in quality of locally produced cigarettes with better packaging and by the increased consumption of foreign cigarettes. The tobacco industry is owned by the Government, which controls 92% of the Egyptian market. Tobacco industry revenues have increased by 50% in the period 1994–1999 and profits have increased by 250% in the same period. The tobacco industry is absorbing 2.4% of the industrial employment. There is no tobacco farming in Egypt and only two sectors can be considered in tobacco employment: cigarette manufacturing and cigarette wholesaling and retailing. The input–output method has been used in this study to measure the effects of tobacco control policies on total industry employment. The calculated employment multiplier in the tobacco industry is very small and is one of the lowest multipliers among other sectors. This means that the tobacco industry is a capital-intensive industry; it needs a very small number of workers.

Two scenarios have been simulated to measure the effect of tobacco control policies on total employment: implementing price measures (increasing the price of cigarettes) and implementing non-price measures (in this case, based on the assumption that there is a negative relationship between the level of education and the expenditure on cigarettes, the level of education was used as a proxy for enforcing non-price measures). Both measures will lead to decreased employment in the tobacco sector and decreased tobacco production. But cigarette consumers will switch to other goods that will create a net increase in total employment, workers will switch to more labour-intensive sectors like the food industry, the textile industry and agriculture. Consequently, the results show that implementing tobacco control measures (price and non-price measures) in Egypt will lead to a decrease in employment in the tobacco sector but will also result in a net increase in the overall employment, which will have a positive impact on the economy.

3.5.4 Kenya (Leopold Mureithi, University of Nairobi, Kenya)

Tobacco manufacturing is controlled by two companies in Kenya and tobacco is grown by small-scale farmers. Kenya is a net exporter of tobacco and tobacco products. But these exports represent only one-tenth of 1% of Kenya's total exports. Regarding taxation, the excise tax rate on locally manufactured cigarettes stands currently at 135% ex-factory. The excise tax on tobacco and its products contributed to 2% of Government revenue in 2000. The total number of tobacco farming households has dropped lately, probably due to major restructuring in leaf growing. The production of tobacco has also dropped. The per capita consumption of cigarettes in the last decade has fallen by almost 50%, possibly as a result of the country's poor economic situation. The tobacco industry encompasses a whole range of activities: agriculture, manufacturing and commerce. It is labour-intensive in its agricultural operations, highly capital-intensive in its manufacturing stage but labour using in its marketing and distribution. Total tobacco employment represented 2.1% of total recorded employment in Kenya in 2000. It is worth noting that the tobacco companies give farmers subsidized farm inputs. The Government regulates tobacco consumption by imposing bans on advertising, restricting smoking in public places and imposing warnings on cigarette packets. Comprehensive tobacco control policies would reduce cigarette consumption and could

adversely affect employment in the long term. However, this effect is speculative at this time; it is not clearly defined and would require quantification. The input–output analysis would be very helpful but required data are not available at the moment and need to be gathered.

3.5.5 Viet Nam (Hoang Van Kinh, Hanoi Trade University, Viet Nam)

Viet Nam has a tropical climate that is very suitable for tobacco cultivation, but the type of tobacco grown is not of a very high quality. The area devoted to tobacco is cultivated by small-scale households; they constitute unskilled labour. Tobacco cultivation supplies 70–75% of domestic demand. The cigarette industry is expanding in the country and is trying to improve the quality of tobacco. Thirty per cent of tobacco leaf is imported and the share of exports is very small. The import of manufactured cigarettes is illegal and most of these cigarettes entering the domestic market are smuggled. Despite the instability in the output of domestic leaf over the past few years, cigarette production in Viet Nam is on the rise.

Tobacco-related employment accounts for only about 0.5% of national labour in agriculture. Tobacco employment in agriculture represents the biggest share of tobacco employment (74 to 78% of total tobacco employment). It is also important to notice that tobacco is rarely the main source of income for farmers. Tobacco-related employment accounts for 0.3% of total manufacturing employment and 1% in retail sales. And in most cases, sales of cigarettes account for only a small share of the merchandise sold by retailers. The quantitative analysis of the input–output model, which measures the effect of tobacco control policies on employment, is not possible due to a lack of available data.

Regarding tobacco control policies, the Government's target for the coming decade is to implement policies (such as imposing advertising bans, restricting or banning smoking in public places, limiting production capacity or controlling cigarette trading), which aim to reduce the consumption of tobacco products by 1 billion packs per year by 2010. If this target were attained, it would reduce the domestic production of tobacco and tobacco employment. Tobacco employment is expected to decline by 90 000–108 000 workers. But the effect on total national employment is not clear since no study was made on the equivalent increase in employment in other sectors due to a switch from cigarettes to other goods and services.

Because of a lack of time in the schedule, the discussions on the country-case studies were reported in the following session, within the working group on employment.

Session IV: Issues of employment, smuggling and privatization

This session was divided into two working groups to help participants gather in smaller groups to discuss issues of concern more deeply. The first working group focused on employment issues, more specifically on the country-case studies presented earlier. The second working group discussed smuggling and privatization. The participants also worked together trying to find the major topics that had information gaps and on which research should focus for future studies.

Working Group I: Employment

Concerns were raised about the different measures used to reduce tobacco consumption. Is there a difference in the effectiveness of price measures and non-price measures? Do they reduce demand in the same magnitude; do they affect employment the same way? It is very hard to put an answer to these questions. Very sophisticated analysis and good data are needed to capture in particular non-price measures' effects. In addition, it was raised that, to be able to measure those qualitative effects, they need to be well enforced, which is not always the case in many developing countries. Most developing countries do not have these kinds of data, but they could be found in wealthier countries. It was also pointed out that most of those effects are short-lived, the shocks coming from those measures could affect consumption dramatically and reduce it in the very short term but consumption will increase in the longer term. Another issue would be to look at the interaction effects among price and non-price measures and look for ways to pick up the relative effects.

A comment was made on the validity of the price-elasticity measure. The price elasticity measure is estimated to be positive and high in developing countries but it relies on different assumptions, one of them being the absence of smuggling. This is not the case in reality and it should be taken into account when identifying the effectiveness of price-related measures. It was, however, pointed out that studies using individual level data do control for the presence of smuggling. As well, some studies have controlled for the presence of smuggling and still found a significant price-elasticity.

Also regarding price measures, discussions took place on whether the increase of the price of cigarettes reduces consumption or makes consumers switch to other, cheaper tobacco products. To avoid this kind of substitution, all tobacco products should be taxed and not only cigarettes. But this might become a problem when consumers switch to an illegal product.

Regarding the input–output model used in some country case studies, a participant noted that all effects might not be covered when this method is applied because the informal sector is not taken into account. This could weaken the study in countries where the informal sector is very important.

Participants discussed tobacco control measures, stating that they are used to reduce demand. This might have an effect on employment and this is why strong tobacco policies taking account of the possible effect on employment should be enacted. But it is also crucial to know that a direct link between demand reduction and job losses cannot be made in a dynamic process. The tobacco industry adapts to new technologies and consequently reduces employment. Thus, tobacco control policies have played an insignificant role in decreasing employment.

It was noted that in order to help have effective tobacco control policies, policy-makers should consider several important aspects so as not to have resistance from the society and the groups possibly affected by those measures. Governments need to find compensations to help those groups make the transition to alternative ways of living. Research must focus on defining the costs of reallocation in developing countries and try to find the alternative substitutes to tobacco and these can depend on various aspects like their labour intensity and the number of hectares needed for production.

Working Group II: Smuggling and privatization

In this working group, presentations were made on smuggling and privatization issues. The first two presentations focused on the causes of smuggling, recent legal court cases on cigarette smuggling, the role of the industry and the different types of smuggling, as well as the description of the activities of the European Anti-Fraud Office in the fight against cigarette smuggling. The third presentation on privatization tried to answer the following questions: what are the consequences—benefits and costs, to the State and to consumers (and to the new owner of the company) —of privatization?

1. Smuggling of tobacco products (Luk Joosens, WHO)

Worldwide, only three-quarters of exported cigarettes appear as legal exports. The missing ones are probably smuggled. The illicit trade is being estimated at 400 thousand million cigarettes annually. Smuggled cigarettes represent a loss of tax revenue for governments and a public health problem. The total loss of revenue by governments due to cigarette smuggling is estimated at US$ 25–30 thousand million annually.

Evidence shows that smuggling is more prominent in Eastern Europe than in Western Europe and more prominent in Africa than in Europe even though the highest prices of cigarettes are in Western Europe. This means that price is not the only reason for smuggling. There are two kinds of smuggling, bootlegging, caused by price differentials between neighbouring countries, and large-scale smuggling, the main reason being tax avoidance. In the case of the United Kingdom, data show that the problem of smuggling is 80% large-scale smuggling or container smuggling and not bootlegging smuggling.

Cigarette smuggling is caused by the abuse of the transit system and the onus should be placed on the tobacco industry to prove that their products arrive in the end-user market. There are two ways to resolve smuggling: by tackling organized crime or by reducing taxes. Spain, which experienced a major smuggling problem even though prices of cigarettes were very low, has worked on tackling organized crime and succeeded in reducing smuggling from 15% to 5% and the revenues for the Spanish authorities went up. Inversely, Canada and Sweden have lowered their taxes and their revenues went down.

In order to resolve the smuggling problem, it bears noting that it must be tackled at an international level.

2. Measures to control the smuggling of tobacco products (Austin Rowan, OLAF, Belgium)

There are several ways in which finances are raised in the European Community. One of these is through the "Own Resources". Within the own resources are the customs duties collected by Member States when products are imported into the EU. Therefore, when cigarettes are smuggled into the European Union there is a loss of customs duties, or own resources, which has a detrimental impact on the European Community's budget. Those losses are estimated to reach several thousand million Euros a year. Under the European Union's treaties and legislation protecting the European Community Finances is the responsibility of the European Commission. Within the European Commission the European Anti-Fraud Office is responsible for Anti-Fraud actions to protect the community finances.

The Task Group Cigarettes was formed in late 1994 in response to the growing problem of cigarette smuggling into the European Union. The Task Group Cigarette obtains and disseminates intelligence relating to movements of suspect consignments of cigarettes and suspicious companies, etc. It coordinates actions undertaken by the relevant services in the Member States, such as organizing and leading European Community investigative missions to Third Countries to obtain evidence regarding cigarette smuggling into the EU and to present that evidence before the Nations Courts in the EU if necessary. The European Community has many mutual assistance agreements with countries outside the EU. These agreements provide the legal base to exchange intelligence, carry out investigations and generally work together in the fight against fraud. For example, under the terms of the agreement between the United States of America and the European Community on customs matters, the European Anti-Fraud Office, Task Group Cigarettes, works very closely with United States Customs in the field of cigarette smuggling. Evidence shows that there are clearly established links between smuggling of cigarettes into the EU and the part played by organized crime, such as the Mafia in Italy and Russian criminal groups, etc.

3. Privatization: Economic and public health implications (Ayda Yurekli, The World Bank)

The questions to be addressed on privatization are: does it worsen the adverse health impact and market failures that beset tobacco products? If so, what regulatory or other measures would be appropriate? Generally, privatization is expected to bring benefits by increasing efficiency and productivity, which lead to lower prices, higher quality and more variety of a product. This would increase the consumption, accessibility and affordability of the product. But since tobacco is a special product, the expected outcomes of the privatization of this sector will lead to an increase in deaths and diseases, an increase in healthcare costs and an increase of the burden in the society. Evidence from Ukraine shows that since the tobacco industry has been privatized, production has increased. In Turkey, with the introduction of privatization, cigarette consumption has increased even though income has decreased and prices have been relatively stable.

The potential benefits of privatization would be the increase in foreign investment and government revenues and the resolution of a probable conflict of interest between the interest of the State-owned company and the Ministry of Health and the potential disadvantages would be a more aggressive marketing and promotion and a higher tobacco consumption. In addition, private producers may influence governments' decisions on tobacco control measures and abuse tobacco control measures using loopholes in the regulation. The potential negative effects of privatization on public health could be minimized if a regulatory tobacco control framework is set up to protect consumers.

Comments and discussions

It was raised that privatization is an issue addressed in response to the problems State enterprises are causing to governments in balancing their budget. It is not necessarily the ideal solution because of its consequences on health. But if this issue is being considered by governments who own tobacco industries, research must try to find guidelines for government officials to help them decide whether they should privatize or not. These guidelines should be drafted based on each country's own needs. Also, a participant noted that some follow-up should be done after privatization has occurred in a country.

Some participants argued that research should also focus on finding data to estimate more thoroughly how privatization, compared to other factors, could affect consumption, taking into account the difference between country situations.

Regarding harm reduction, it was raised that more research should focus on the way to define it. The area of safer cigarettes has not been studied in depth. Do safer cigarettes really exist and does privatization help produce harm reduction?

In terms of smuggling, participants noted that more reliable data at national and international levels must be found and information on the probable involvement of tobacco industries must be gathered. It is important to have a clear picture of what is going on both for the demand and the supply side of tobacco products.

It was also pointed out that the partnership with other international agencies can be very helpful. The World Customs Organization's (WCO) experience in the field of smuggling could be fruitful. WCO has a strategic expert group that has been working for many years now on cigarette smuggling and covering the entire world.

Session V: Policy implications and research agenda for tobacco control in the 21st century

During this session, the main issues discussed during the two working groups were summarized. In addition, the research agenda developed by Research for International Tobacco Control (RITC) and the World Health Organization in July 1999 was updated, based on the discussions of the last two days' meetings. The research agenda highlights the eight important categories on which research should focus.

- Reports from working groups:

Working group 1: Employment

Regarding employment issues, research must focus on collecting broader data. To be able to make good studies by using, for example, the employment toolkit of the World Bank, specific tobacco-related data need to be found. The problem is that usually in many countries the tobacco producers are very few and form a sort of oligopoly and want to keep their data confidential so they are not shown in national statistics. Researchers must find a way to surmount the problem of data accessibility.

The employment toolkit seemed to be useful for some countries where it has been applied. However, research should look at ways to improve the methods calculating the impact of reduction of tobacco demand on tobacco employment. In the input–output model, for example, there is a gap because the tobacco products produced in the informal sector are not taken into account by this model and this would lead to less accurate results. However, it is important to note that this lack of information only underestimates the proportion of total employees. If tobacco control measures were to be implemented, this might lead to more employment in the informal sector. Consequently, if the input–output model concludes that tobacco control measures will lead to a reduction of total employment, the decrease will be less dramatic because of the increased number of employees in the informal sector. On the other hand, if the input–output model concludes that total employment will increase, the increase will be higher than stated because of the informal sector.

When it comes to the impact of tobacco control measures, the time horizon must be clearly specified. How long does it take for the measures to have a full impact on the economy? Five years, ten years, thirty years? Research could focus on finding the most appropriate time horizon to be used in the various studies.

Regarding alternative livelihoods, many aspects can affect the definition of good alternatives for farmers switching from tobacco to other activities.

- Are the alternatives on farm or off farm?
- Are the farmers living in urbanized or rural areas?
- Is the livelihood of the alternatives stable or not?
- Do farmers need to find occupations that need the same amount of hours as tobacco cultivation did or do they have to look for alternatives that bring the same or a better yield?

Another important issue to consider is the international dimension of alternative activities, especially alternative crops. In addition, the approach will be different depending on whether the study is made for small holders or large-scale farmers. And if tobacco demand declines gradually, will farmers be able to adapt on their own or will they need assistance? Research will need to consider all these issues for a better understanding of the impact of a global reduction of demand on tobacco employment.

Working group 2: Privatization and smuggling

Regarding the issue of privatization, research should focus on its impact on countries where it is already taking place, trying to measure the effect on cigarette production, cigarette consumption and the prices of cigarettes.

Researchers should develop guidelines for government officials on how to approach the decision of privatizing or not, find the criteria for such a decision. And if governments want to privatize, what are the policies that need to be in place before privatization occurs in order to protect public health?

Another issue to consider is whether products made by the private enterprises are safer. So far, no difference has been proven.

Regarding smuggling, research needs to focus on finding more reliable data at both national and international levels. A more robust multisectoral cooperation between international organizations could be very helpful in this issue. The increasing active collaboration between WHO and WCO is a good example.

Better research must be also done on the involvement of the tobacco industry in tobacco smuggling. Several of the industry's internal documents and court cases prove the tobacco industry's involvement in illicit trade.

More research could be done on the determinants of smuggling. Corruption seems to be the main reason for smuggling in comparison with price differentials.

- Discussion of policy implications and research agenda:

Summary of the main research recommendations (Linda Brigden, IDRC)

The speaker provided an update of the research agenda developed by Research for International Tobacco Control (RITC) and the World Health Organization in July 1999 and, based on the discussions made throughout this meeting, presented the eight categories highlighted in this agenda:

1. **Country-specific research**: there is a need for more research on the social and economic costs associated with the tobacco epidemic and more work should be done for the collection of clearer tobacco-related data in many countries.

2. **Policy intervention**: regarding the economic issues, research should focus on the change of equilibrium that the implemented tobacco control policies would induce, the effects of privatization and the effects of trade liberalization on tobacco production, consumption and tobacco prices and tobacco trade. Research should also study in more depth tobacco smuggling. In terms of legislative policies, there is a need to look at the level of implementation of tobacco laws, especially non-price strategies.

3. **Programme interventions**: more work must be done on how to develop effective messages to encourage non-smoking in the home. It should also focus on ways to develop and disseminate effective messages regarding the health impact of smoking using a limited budget.

4. **Treatment for tobacco dependence**.

5. **Tobacco product design and regulation**.

6. **Tobacco industry analysis** in order to set straight industry myths, especially those related to issues such as revenue losses, job losses and smuggling.

7. **Tobacco farming**: on this topic, research must focus on many issues such as the role of the WTO and trade policies in tobacco cultivation, the future of China in world markets, identification of alternative crops and their accessibility to farmers, and providing clarification for governments supporting tobacco cultivation. In addition, natural experiments must be found and used as examples to identify the real effects of tobacco control policies on tobacco farmers.

8. **The Framework Convention on Tobacco Control (FCTC)**: the research on all the above-mentioned issues is conducted to help develop and implement the FCTC.

Comments from the participants added to these issues the importance of classifying separately the needs of the different regions to facilitate the work. Also, research should keep on working to identify the numerous benefits of tobacco control policies in the economy.

Closure

Postscript

The preliminary findings from the projects summarized during this meeting (the work of FAO and ILO as well as the employment studies) have been represented in the Secretary-General's report on Task Force activities to the 2002 Substantive Session of the Economic and Social Council. Work is ongoing for these projects; the report from the FAO studies for example should be finalized in mid-2002[5].

Notes:

[1] The collaborating agencies of the United Nations Task Force are: Department of Economic and Social Affairs of the United Nations Secretariat, Food and Agriculture Organization of the United Nations (FAO), International Civil Aviation Organization (ICAO), International Labour Office (ILO), International Monetary Fund (IMF), United Nations Children's Fund (UNICEF), United Nations Conference on Trade and Development (UNCTAD), United Nations Development Fund for Women (UNIFEM), United Nations Development Programme (UNDP), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Environment Programme (UNEP), United Nations Fund for International Partnerships (UNFIP), United Nations International Drug Control Programme (UNDCP), United Nations Population Fund (UNFPA), The World Bank, World Customs Organization (WCO), World Health Organization (WHO), World Intellectual Property Organization (WIPO), World Trade Organization (WTO).

[2] Argentina, Bangladesh, Belgium, Brazil, Bulgaria, Cambodia, Canada, Egypt, Greece, Guyana, India, Indonesia, Japan, Kenya, Malaysia, Nepal, the People's Republic of China, the Republic of Armenia, Thailand, Turkey, the United Kingdom, the United States of America, Viet Nam and Zambia.

[3] The World Bank defines lower-quality cigarettes as cigarettes made of low-grade tobacco leaves and packaged in unappealing ways.

[4] The Beedi Workers' Welfare Fund is administered through the Labour Welfare Organization, Ministry of Labour and is financed through a levy from excise duty on manufactured beedis.

[5] The finalization of the report has been delayed until the first half of 2003.

Annex I

Tobacco industry in Armenia: evaluating the impact of tobacco control policies on employment

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Introduction

Following the collapse of the former Soviet Union, Armenia established new directions and targets for its political and socioeconomic development. New principles of economic regulation were adopted from Western economic policy. However, Armenia faced formidable obstacles on the road to shaping a completely new economic system. A devastating earthquake in 1988 and interregional conflict with neighbouring Azerbaijan had a drastic impact on the economy, resulting in rising unemployment and making job creation a top priority for policy-makers.

In light of recent promising developments in the investment climate and economy as a whole, policy-makers and the population alike viewed the tobacco industry's activity in the country as an important step towards economic stabilization and a means of boosting employment. For this reason the tobacco control policy has never been strictly interpreted; it has always been considered as a measure that mitigated the impact of smoking on health but never in terms of its economic consequences.

Armenia figures among those countries where tobacco use has reached enormous proportions. According to research conducted by the Ministry of Health's National Tobacco Programme, every other adult Armenian citizen, regardless of sex, is a smoker. Thirty per cent of teenagers and some thirty-five per cent of women smoke[1]. The number of children exposed to environmental tobacco smoke is out of control.

As previously mentioned, the tobacco industry has stepped into the country at a stage of rapid economic development. An increasing number of jobs are opening up, thus making the social impact of the tobacco industry greater on society and the economy.

Under these circumstances the need to take appropriate action regarding improving healthcare while assessing the possible impact of its effect on the economy must be carefully considered.

> The health impact of tobacco use has been thoroughly investigated and its negative influence on the human organism has been confirmed unconditionally. The fact that cigarette smoking is damaging human health on a global scale is not a matter for dispute. Smoking-related diseases are already responsible for one in ten adult deaths worldwide. By 2030 or sooner, the ratio will be one in six, or 10 million deaths a year, making smoking the largest single cause of death. Until recently, this epidemic of chronic disease and premature death mainly affected the populations of the developed world, but it is rapidly shifting to the developing world. A recent IMF study *(1)* predicted that by 2020, seven of every ten people who die from smoking-related diseases will be from low- and middle-income countries.

[1] National Statistical Service insists on more moderate proportions based on its own research.

The situation in the sector

Tobacco production

The history of tobacco cultivation in Armenia dates from the 17th century. Armenian cigarette production, which comprised 90% of the domestic market in the 1980s was almost completely destroyed following the collapse of the former Soviet Union. The economic crises more or less affected all four branches of the industry—tobacco farming, leaf marketing and processing, cigarette manufacturing and cigarette wholesaling as well as retailing.

Tobacco farming

Agronomy and agriculture play a central role in Armenia's economy and will continue to do so in the future. Agriculture represents about a 30% share in the country's GDP. There are over one million people living in villages, and about 65% of the demand for food is met through domestic production.

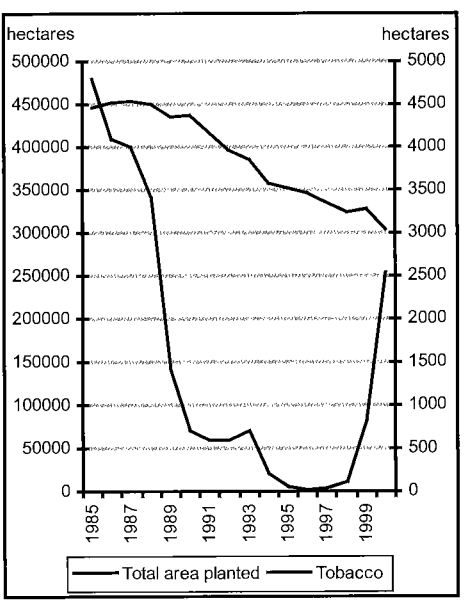
Armenia's agricultural productivity is unsatisfactory, with an inefficient irrigation system and that is worn out or obsolete.

In addition, the area under cultivation is restricted by Armenia's highland.

Armenia's entire territory comprises some 2 980 000 hectares. Of this the total area under cultivation constitutes about 10%. Over the last 15 years it was reduced by about 30%.

Figure 1 illustrates the changes in the size of the total planted area from 1985 to 2000.

Figure 1. Total area planted in Armenia



From Statistical Yearbook *(2)*

Table 1. The share of tobacco within the total cultivated area (1985-2001)

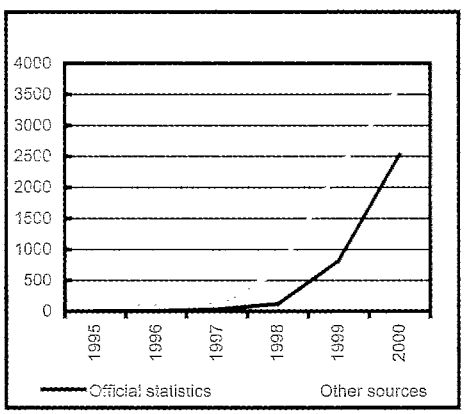
1985	1986	1987	1988	1989	1990
1.08%	0.91%	0.88%	0.76%	0.32%	0.16%
1991	1992	1993	1994	1995	1996
0.14%	0.15%	0.18%	0.06%	0.02%	0.01%
1997	1998	1999	2000		
0.01%	0.04%	0.25%	0.83%		

The recent increase in the area planted with tobacco can be interpreted as the result of major investments by the tobacco industry, which is partly based on domestically produced tobacco.

The economic infrastructure of Armenia has been undergoing major reform to which the national statistics system has not always been able to adjust. In addition, a great amount of economic activity, particularly in the early 1990s, has become impossible to track down.

As the result, official data on various activities, economic and otherwise do not always reflect the actual situation. For example, the official data for the area cultivated with tobacco noticeably differ from estimates carried out by a company engaged in tobacco production and which conducted its own analysis and observations of the sector.

Figure 2. Tobacco cultivation area (in hectares)

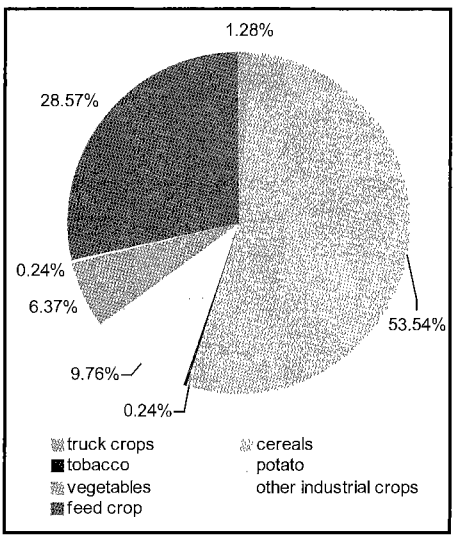


It bears mentioning that tobacco occupies the last row in the structure of total area planted.

The aggregate tobacco harvest, like the area under cultivation, had the same dynamics, with a greater yield in the 1980s, a lesser one in the early 1990s and, in recent years, experiencing a solid growth trend.

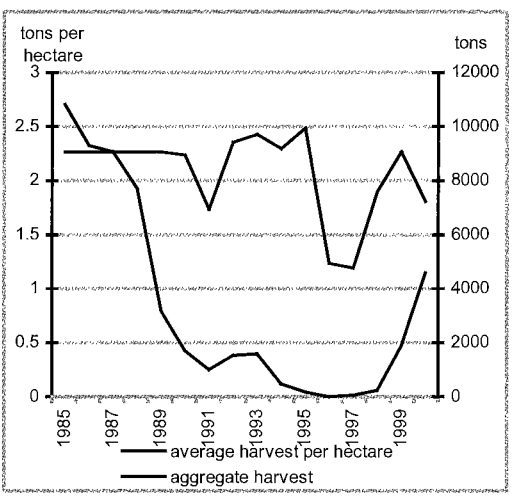
As shown later, the local tobacco harvest is largely used for domestic production, with only a small amount of the product (about 7%) used for export.

Figure 3. The structure of the area under cultivation



From Statistical Yearbook *(2)*

Figure 4. Aggregate tobacco harvest and average productivity



From Statistical Yearbook *(2)*

Given the tobacco industry's level of mechanization and limitations experienced in the country's agriculture sector, it is common practice in the domestic tobacco industry, that on average eight to ten people cultivate 1 hectare of land[2]. Since there are no statistics on the number of people engaged in tobacco farming, this figure may be calculated by multiplying the total area planted with tobacco with the figures mentioned above. In addition, because the work force engaged in tobacco farming in Armenia consists exclusively of households,

[2] "Masis -- Tobacco" ltd. Greek-Armenian Joint Venture

using estimates that on average there are three people to one household involved in the farming, we can assume that the number of households is equal to the number of people in the work force divided by three.

Table 2. The estimated number of people in the labour force and households engaged in tobacco farming

	1995	1996	1997	1998	1999	2000
Labour force	558	171	315	1053	7380	2275
Households	186	57	105	351	2460	7584

The obvious trend in tobacco farming made the role of households more important for farming overall in 2000. The share of tobacco farmers within the total grew from 0.13% to 5.72% in 2000.

It is more complicated to estimate total household income in tobacco farming, since there are no official statistics on the relevant information. Nevertheless, the situation is easier to decipher since 2000 because only one private company in Armenia is responsible for purchasing the output of tobacco farming from households. The aggregate volumes of contracts between the private firm and the households are shown below.

Table 3. Aggregate income of households in tobacco farming

	2000	2001 [a]
Aggregate income of households in US dollars	6473000	8000000

[a] Estimation

Thus, an average household earned the equivalent of about US$ 850 from tobacco cultivation in 2000. It should be noted that Gross Domestic Product (GDP) per capita for the same year was the equivalent of $US 503 *(4)*.

To summarize, moderate resources are currently being used in the sector, which does not represent a significant percentage of Armenia's agriculture. However, tobacco cultivation is growing at a good pace and this trend is expected to continue in the future.

Leaf marketing and processing

Because the sector is new for the Armenian economy, it is easier to come up with statistics for tobacco leaf marketing and processing in addition to the fact that only one company is active in this sector. All the data on tobacco leaf marketing and processing before the year 2000 were aggregated in statistics for cigarette manufacturing. In 2000 only 800 people were engaged in leaf marketing and processing and their total number is expected to remain the same for the year 2001.

Cigarette manufacturing

The dynamics of cigarette manufacturing in Armenia reflect the sector's structural changes beginning in the early 1990s. First, the economic collapse and breakdown of economic links with former trade partners caused production volumes to fall dramatically. In addition, trade liberalization opened the domestic market for internationally recognized brands, which were in short supply during the Soviet period. Under such new circumstances domestic tobacco products could no longer compete with these superior brands and were crowded out of the market.

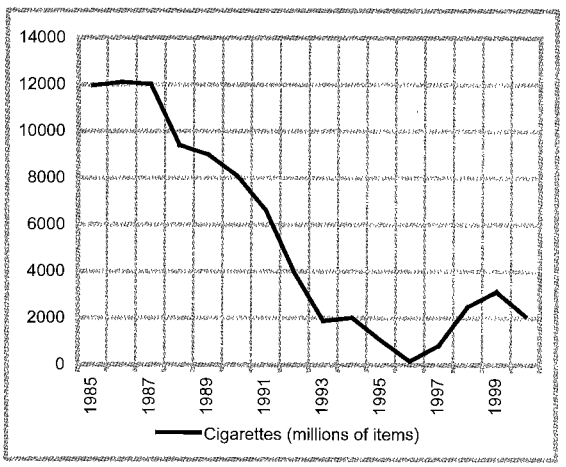
The tobacco industry has continued to expand rapidly while employment in the sector currently remains at an insignificant level.

Table 4. Number of people employed in cigarette manufacturing

Years	1990	1991	1992	1993	1994	1995
Employment	1125	1050	916	818	707	542
Years		**1996**	**1997**	**1998**	**1999**	**2000**
Employment		427	576	492	541	854

From National Statistical Service, 2001 *(5)*

Figure 5. Cigarette manufacturing

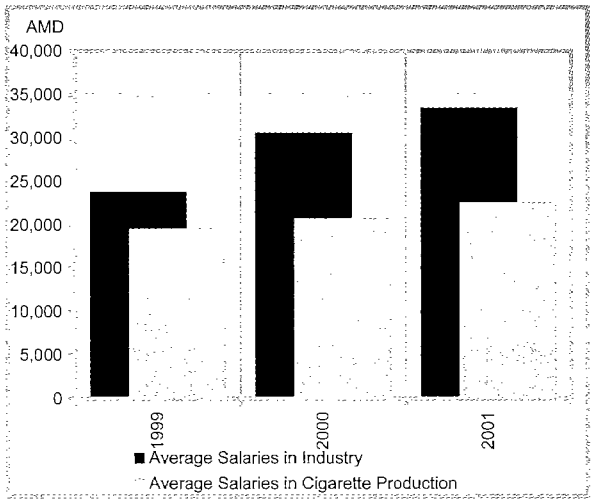


From Statistical Yearbook *(6)*

As shown in Table 4 the total number of employees is rather small and does not even make up a significant amount of total employment. In 2000 the tobacco industry employment constituted 0.067% of the total employment (unemployment was 11.7%*(7)* in 2000 or 169 500 people).

Although labour qualifications in cigarette manufacturing are equivalent to those in similar industries, workers on average workers are paid less than in other manufacturing sectors (Figure 6). This does not include wages of administrative staff.

Figure 6. Wages in the manufacturing industry and in cigarette manufacturing sector



From Statistical Yearbook of Armenia *(8)*

Cigarette wholesaling and retailing

Information on cigarette wholesale and retail in Armenia is not always available. Currently there are seven major wholesalers in the market, five of them importers. The remaining two are domestic producers who sell their products through their own network. The workforce engaged in domestic wholesale cigarette production is factored into the total employment in cigarette manufacturing. Statistical sources do not publicize the size of the workforce engaged in the wholesale import of cigarettes. However, it is possible to estimate employment in the sector by making several assumptions and approximations.

Assessment of the production volume in the market is based on the assumption that there is no change in the stock of cigarettes on a yearly basis. Based on this assumption, local market sales should be equal to overall production minus exports plus imports of the product.

Table 5. Assessment of the cigarette market structure (millions of items)

	1995	**1996**	**1997**	**1998**	**1999**	**2000**
A) Production	1 042	152	815	2 489	3 132	2 096
B) Exports	0	-	-	34	87	77
C) Imports	821	1 118	1 286	3 135	1 079	1 135
D) Local cigarettes in the market (=A-B)	1 042	152	815	2,455	3 045	2 019
E) All production in the local market (=C+D)	1 863	1 270	2 101	5 590	4 124	3 154
F) Foreign (=C/E*100%)	44.1%	88.0%	61.2%	56.1%	26.2%	36.0%
G) Local (=D/E*100%)	55.9%	12.0%	38.8%	43.9%	73.8%	64.0%

The next assumption is that the importers do use as much labour force for cigarette wholesaling as the local producers do.

The further estimate will be based on the average product volumes distributed by an employee in the wholesale trade. Bearing in mind, that one of the local Armenian companies which, according to the British American Tobacco Company (BAT), owns about a 0.7% share of the local market, has seven employees engaged in cigarette wholesaling. (The tobacco wholesale market is not yet organized; a single producer purchases tobacco directly from the farmers and uses it in its production process). Table 5 shows the local market size. To estimate employment for the year 2000 0.7% of the total product volume must be calculated, so that 0.7% of 3 154 000 000 items is equal to nearly 22 000 000. Thus seven employees sell 22 million items of cigarettes in the wholesale market, which is 3.15 million per one employee. Extrapolating the figure to the overall market the labour force can be estimated as 3 154 000 000 divided by 3 150 000. The approximate result is nearly 1 000 employees for the year 2000.

Assuming, that the sales volume per employee had been stable for the period researched, the dynamics of wholesale employment becomes apparent.

Table 6. Estimated employment in wholesale trade

1995	1996	1997	1998	1999	2000
591	403	667	1772	1 308	1 000

Retail trade should also be estimated and extrapolated. The basis for the estimate will be the statistical data for retail trade turnover, the share of cigarettes in it and employment in retail trade. Employment in cigarette retail trade can be estimated proportionally, assuming that the same number of employees is needed to sell both cigarettes and other products with the same price.

Table 7. Estimation of employment in cigarette retail trade turnover

	1995	1996	1997	1998	1999	2000
Employment in retail trade (thousands of people)	100	110.2	115.6	113.2	120.3	132.2
Share of cigarettes in total retail trade turnover (based on price)	0.6%	0.3%	0.3%	0.4%	0.4%	0.5%
Estimated employment in cigarette retail trade (people/full time)	600	331	347	453	505	661

From Statistical Yearbook of Armenia *(9)*

Overall employment in the cigarette wholesale and retail trade sector will be as follows:

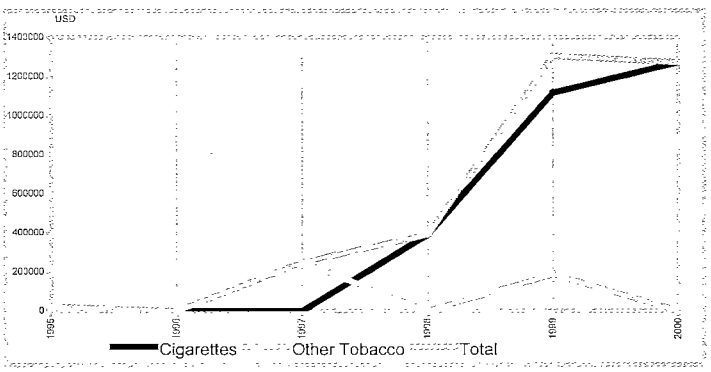
Table 8. Employment in cigarette wholesale and retail trade

	1995	1996	1997	1998	1999	2000
Retail	600	331	347	453	505	661
Wholesale	591	403	667	1772	1308	1000
Total	**3186**	**2730**	**3011**	**4223**	**3812**	**3661**

Tobacco trade

Tobacco trade dynamics clearly reflect the situation in the local market: the crisis in the industry and the subsequent growth in cigarette production and improvement of marketing. The imports of cigarettes rose in parallel with economic stabilization as the solvent demand for cigarettes increased. After the local industries began cigarette production, imports were partly substituted by the domestic brands. Meanwhile exports of local production rose. These trends are clearly observable in the figures below.

Figure 7. Revenues from exports



From National Statistical Service *(10)*

The quantitative illustration of the Figures below can be observed in the following tables.

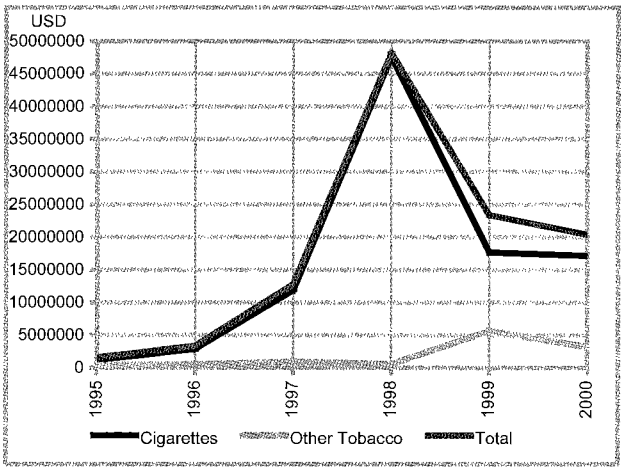
Table 9. The quantitative dynamics of cigarette trade (thousands of items)

	1995	1996	1997	1998	1999	2000
Exports	264	0	0	33625	87094	77179
Imports	820948	1117940	1286481	3134792	1079408	1135014

Table 10. The quantitative dynamics of tobacco leaves trade (tonnes)

	1995	1996	1997	1998	1999	2000
Exports	0	0	162	0	319	0
Imports	368	591	797	444	2531	1337

Figure 8. Expenses on imports



From National Statistical Service *(11)*

Table 11. Tobacco products trade partners (cumulative volumes of trade from 1998, in US dollars)

Total Exports		**Total Imports**	
Russia	1,936,871	Panama	35,194,478
USA	681,063	Turkey	29,462,035
Georgia	378,959	Germany	7,606,341
Ukraine	248,700	Bulgaria	5,919,070
Belgium	215,645	Belgium	4,955,404
The Islamic Repub. of Iran	210,750	Virgin Islands	3,978,930
Hong Kong SAR	210,375	Ukraine	3,812,194
Turkmenistan	209,319	UK	3,477,028
UK	58,650	Cyprus	2,558,490
Hungary	47,880	United Arab Em	2,195,034
Byelorussia	33,000	Switzerland	1,408,771
Liechtenstein	26,594	Greece	1,051,792
Latvia	11,600	Georgia	937,032
Canada	2,167	India	678,645
Kyrgyzstan	1,548	Uzbekistan	317,200
Taiwan	800	Lebanon	222,100
Japan	762	USA	201,028
Cyprus	400	Canada	96,438
Germany	185	Islamic Repub. of Iran	83,077
Switzerland	125	Russia	74,468
Egypt	50	Netherlands	72,448
Greece	20	France	43,709
India	20	Zimbabwe	980
		SAR	246
		Italy	107

From National Statistical Service *(12)*

The tobacco trade in Armenia, while having definite and predictable trends in its volumes, did not have a stable structure. The list of trading partners varied from year to year. Yet the major trade partners can be specified considering the cumulative trade volumes during the recent period.

As seen in Table 11 the primary markets for exports are The Russian Federation and the United States of America. Tobacco is mainly imported from Panama, Turkey and Germany.

As stated above, since the main Armenian tobacco production exports go to The Russian Federation and the United States of America, the main trade conditions and imports requirements of these countries will be described below *(13)*

The Russian Federation

The Russian Federation prefers imported raw tobacco because of the low tariffs. Cigarette imports on the other hand are highly taxed. Imported leaf tobacco is charged a 20% value added tax (VAT), which is compensated later in the price of manufactured tobacco products.

There are no non-tariff restrictions on imports. Imports are handled by various private companies, some of which were spun off the former State trading enterprises but are now doing business on their own. Cigarettes are subject to customs reference price requirements.

The excise tax depends on the quality or grade of the cigarettes and varies from the equivalent of US$ 1.00 to the equivalent of US$ 3.57. However, the law doesn't differentiate between high-quality cigars and low-quality cigars or cigarillos. Tariff preferences were eliminated to reduce smuggling. Tariff preferences for non-profit and charitable institutions such as sports were removed. However, imports of cigarettes from Armenia and other Commonwealth of Independent States (CIS) countries enter tax-free.

Anti-smoking measures are not an issue in the Russian Federation because Russians have reacted slowly to concerns over the adverse effects of smoking. There is little if any legislation, which covers cigarette sales. However, there is a ban on cigarette advertising on television and in cinemas. Import companies (producers) label cigarettes with health warning. They do not advertise in youth magazines and do not post billboard ads near schools.

All tobacco products for retail sale in the Russian Federation must have a Russian language label indicating specific information. It must show: the product name, trade mark, name and address (including country) of the producer or licensee, whether the product is filtered, the quantity of pieces or weight (net), a notification on presence of menthol (for cigarettes with menthol), and a message on the dangers of smoking.

The United States of America

An import license is not required for importing tobacco or tobacco products into the United States. However, importers are required to obtain a pesticide and end-user certificate from the Agricultural Marketing Service's Tobacco Division before entry into the United States.

There is a tariff-rate-quota for imports of flue-cured, burley, and other light air-cured tobacco that are imported for the manufacture of cigarettes. To date Armenia exports only cigarettes to the United States of America and the restrictions imposed for tobacco products do not apply.

Trends in prevalence and consumption

As previously mentioned, the smoking prevalence in Armenia is rather high. No major research or surveys have been conducted due to lack of resources: the problem studies have had more limited (in scale or in geography) character. This may be the reason why the survey or research results vary greatly. Given this situation, choosing a sound means of representing smoking prevalence is rather complicated.

> According to research conducted by the National Statistical Service (in cooperation with the International Labour Organization and the United Nations Development Programme) only 29% of men and 1.24% of women smoke. The relevant results of research conducted by the National Tobacco Control Programme of the Ministry of Health are, accordingly, 50% and 39.6%. Since the NSS survey is broader and more comprehensive[3], we will rely on the National Statistical Service data, meanwhile, where applicable, making several adjustments from the Tobacco Control Programme survey [4]

According to the National Statistical Service survey findings, tobacco prevalence is particularly high in the age group 40–44 years, at 36.6% (comprising about 75 % men and 2.0% women).

This share is considerably smaller in the age groups below and mentioned above: in the age group of over 70 years it is 20.4 % (including some 47 % of men and only 0.6 % of women), and in the age group of 15-19 years where it is 7.6% (including 19.6% of men, with no women smokers registered in the group).

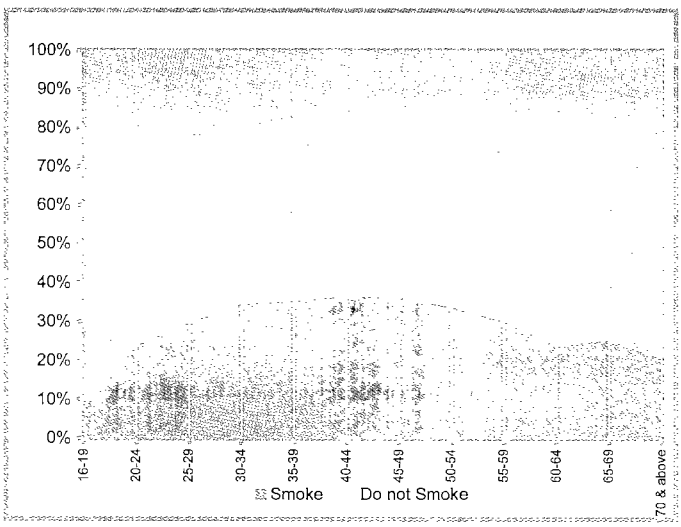
> Here it should be stated, that the survey results could have been distorted by certain national peculiarities: in the age groups of 15–19 and 20–24 years there might well be a considerable number of covert smokers who did not want to admit to their smoking. The above statement is especially true for women in these age groups. It is noteworthy that the ratio of smoking women vs. the total number of smokers fluctuates considerably, not only between age groups, but also geographically. In Yerevan, the percentage of women smokers is much higher.

Smoking is costly and not everyone can afford it. According to the survey results, the average cost of cigarettes daily per smoker was 137.5 Armenian Dram in 2001, the equivalent of US$ 0.24, and the average monthly cost was 4,125 Armenian Dram, or US$ 7.20, which is about 16% of an average salary. Naturally, the impact of smoking on the unemployed is higher than on the employed.

[3] The Tobacco consumption sample survey covered 5 000 households in 13 urban areas of the country (or 0.9% of the total of urban households).

[4] The casual empiricism proves that much more than 1% of women are smokers.

Figure 9. Ratio of smokers vs. non-smokers (2001)



From National Statistical Service

In terms of educational level the percentage of smokers is especially high among graduates of vocational training institutions, at 39.7%. In the categories of smokers with higher, incomplete higher and secondary professional education, the percentage was 28.4% on the average (30.9%, 22.4% and 27% by levels respectively). The percentage of smokers among the population with a primary school education is 21.9%, and of those without primary education, 11.9%.

The low percentage of smokers in the latter two groups can be explained not by the low educational level, but rather by the fact that this group is dominated by elderly persons whose smoking is limited by age and health considerations.

The overwhelming majority (61.3%) of cigarette consumers (4 355 persons) smoke one pack a day. At the same time, the daily consumption for men is higher than that for women. Of the women 33% smoke one pack or more a day and of the men 79.5%.

The recent trend in tobacco product sales indicates increasing tobacco consumption, which could be explained either by the rise in the number of smokers or the average consumer's increased smoking.

Tobacco policy parameters

Armenia's tobacco policy has not been enhanced since its independence. Intentions to regulate tobacco use and trade have been discrete and inconsistent. Along with the strengthening of the power of the State and law enforcement, cigarette smuggling, which has reached enormous proportions, has been reduced during in the last five to six years and the Government has started to collect stable revenues from tobacco trade and production.

To reduce smuggling the Government has carried out several reforms in tax and customs administration. Excise stamps have been placed on cigarette (and some other) products. A

pack of cigarettes cannot be sold unless it has this excise stamp on it. Those caught selling cigarettes without this stamp face severe penalties.

Nevertheless, the black market is extensive, offering smugglers a good opportunity to continue their illegal economic activities.

According to the "2002 Index of Economic Freedom" by The Heritage Foundation, Armenia ranks as a country with a "mostly free" economy. Meanwhile the same institution estimated that the Armenian black market made up to 40–53% of the country's GDP.

The State has sought to neither stimulate nor restrict tobacco producers and farmers by offering subsidies or imposing quotas. On the other hand, a single company that purchases the tobacco harvest from the farmers, prepays the transaction. Consequently it is in the farmers' interest to grow tobacco, since few other farming crops are offered such an advantage.

The taxation structure within the tobacco production and trade sector is a little stricter than in other sectors.

In April 2000 Parliament adopted a separate Law on "Fixed Payments for Tobacco Products".

The Law simplified the procedure of tax collection by combining VAT, excise tax and customs payments in one fixed payment (for statistical reasons each type of tax maintained its relevant share in the overall fixed payment: i.e. each company reports how much VAT or excise TAX it pays to the Budget). The size of the fixed payment is different for domestic and foreign brands, thus granting several advantages to local producers.

Table 12. The rates of fixed payments, as amended in the Law in December 2001

Product Type	Units	Local	Imported
Cigars	US$ per 1 000 items	2 200	3 000
Cigarillos	US$ per 1 000 items	22	30
Cigarettes with filter	US$ per 1 000 items	8	11
Cigarettes without filter	US$ per 1 000 items	3.5	6
Cigars	US$ per 1 000 items	2 200	3 000

As domestic tobacco production is carried out by only two companies, both with foreign investments, and since these companies enjoy a privileged tax status as joint ventures, it is clear that the State's economic policy neither limits nor seeks to stimulate the production of cigarettes.

Due to the supportive investment climate, promoted by the Government, companies that invest in Armenia and those with foreign capital participation enjoy an advantageous tax regime. First, all investments made in Armenia are not subject to import duties or taxes. Second, beginning in 1998, all companies that have over US$ 1 million invested by non-residents, enjoy the following tax benefits in Table 13.

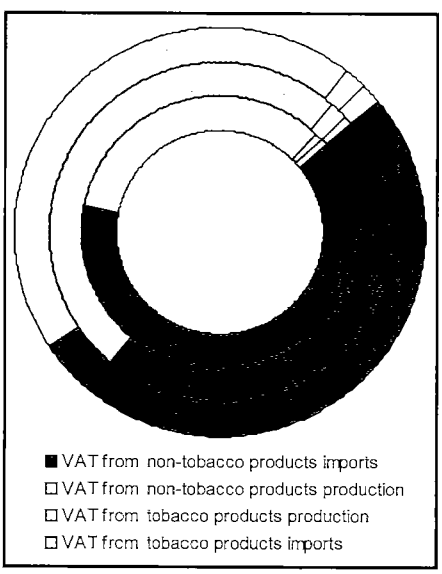
Table 13. Year of foreign investment and profit tax deduction

	100% in the years	50% in the years
1999	2000 & 2001	2002 – 2009
2000	2001 & 2002	2003 – 2008
2001	2002 & 2003	2004 – 2007
2002	2003 & 2004	2005 – 2006
2003	2004 & 2005	
2004	2005 & 2006	
2005	2006 & 2007	
2006	2007 & 2008	
2007	2008 & 2009	

As previously mentioned, beginning in 2000, all types of taxes on tobacco were combined into one fixed payment, where each type of tax preserved its fixed share. Thus it is possible to compare the VAT and excise tax collected from tobacco products with those of other products.

As seen in Figure, the VAT from tobacco products is rather low compared to the VAT on other products.

Figure 10. Comparison of VAT revenues from tobacco products with overall VAT revenues from all others



From the Ministry of Finance and Economy of Armenia

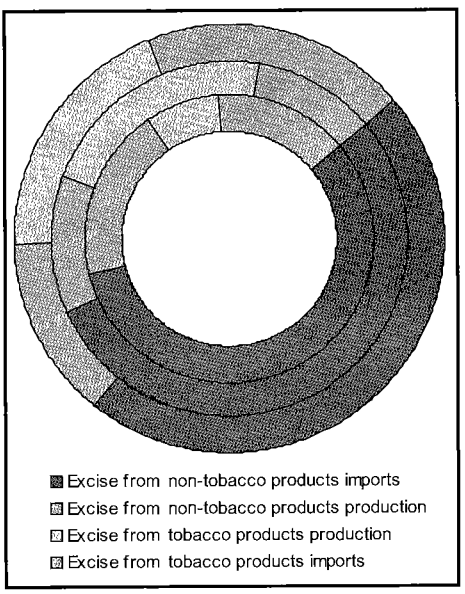
This is true both for local production and for imports.

The next figure represents the situation regarding excise tax, where the share of tobacco is impressively high.

The excise tax from tobacco products constitutes nearly half of the total revenues from this type of tax.

The budget revenues from the tobacco industry, as stated above, have increased greatly and during 2000 constituted about 11% of the total budget tax revenues.

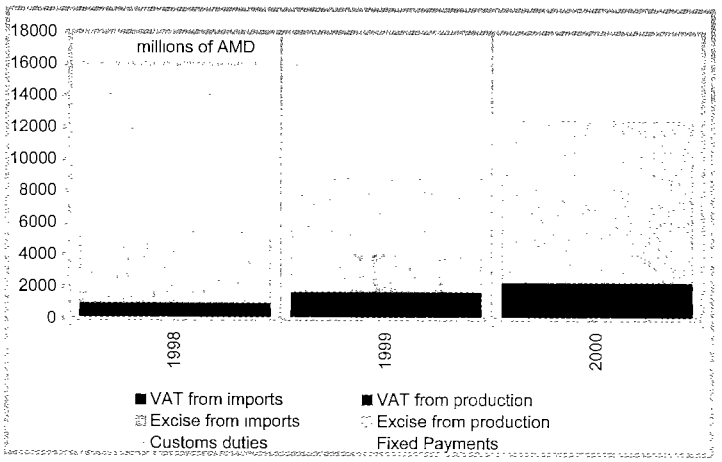
Figure 11. Comparison of excise tax revenues from tobacco products with overall excise tax revenues from all other product



From the Ministry of Finance and Economy of Armenia

Obvious trends in tobacco production taxation volumes make the economy more vulnerable to the situation in the tobacco sector. Faced with an ongoing budget deficit and the lack of financial resources to restore a balanced budget on the one hand, and the need to pay off foreign debt on the other, identifying additional revenue sources assumes heightened importance.

Figure 12. Overall revenue from tobacco product taxation



From the Ministry of Finance and Economy of Armenia

Thus the budget constraints make decision-making in tobacco policy more complicated.

Tobacco control policy

The policy practice

In Armenia, tobacco-use research has always been conducted in the context of its impact on health. Under Soviet rule the State periodically organized anti-smoking campaigns, mostly using propaganda and advertising. The cigarette ban, while used in many State institutions, was never taken seriously. Control over teenage smoking was more effective since families and communities were concerned about their children's upbringing.

Following the collapse of the former Soviet Union there were no structural changes in approaches towards tobacco use.

There is a partial restriction on tobacco product advertising. The Law on Advertising prohibits pitching tobacco advertising to children and youth.

> The following articles in Armenia's Law on Advertising concern restrictions on tobacco advertising:
>
> Article 14. Protecting under-aged from advertising production, placement and dissemination
>
> 2. Advertising of alcoholic drinks and tobacco on radio and TV programmes for children and youth, in printed publications targeted to the under-aged, as well as in children's, educational, medical, cultural sport organizations and institutions and in their areas is forbidden.
>
> Article 15. Peculiarities of advertising for certain kinds of goods
>
> In advertisements for alcoholic drinks and tobacco it is forbidden:
>
> a) to suggest that alcoholic drinks and tobacco are healing, stimulating and relaxing;

b) to induce consumers to use alcohol and tobacco extensively, negatively assess abstaining from them or their use in moderation;

c) to present as a positive feature the high content of alcohol in drinks and of nicotine in tobacco.

2. Tobacco advertising, not including warning statement about harmfulness of smoking, is forbidden.

3. In alcoholic drinks and tobacco advertising it is prohibited to address the under-aged directly.

4. It is prohibited to demonstrate the process of use of alcoholic drinks and tobacco during their advertising.

5. Advertising of alcoholic drinks and tobacco through electronic mass media during the hours of 7:00 to 21:00 is prohibited.

A draft Law has been prepared to strengthen control over tobacco use. It has several strict prohibitions over tobacco advertisement and use in public buildings and places. For example, it completely bans tobacco advertising on radio or TV.

Employment in tobacco industry

Armenia can be described as a tobacco net importer country since it consumes more tobacco than it produces for the domestic market and the figure for net exports is negative.

Employment in the tobacco industry does not make up a large percentage of total employment. To return to overall employment in the tobacco industry, several adjustments must be made to estimate its amount.

Full-time employment in agriculture is estimated by adjusting the figures in the Table 2 with the ratio of labour-force proportions. It is estimated that in the agricultural sector of Armenia 55.8% of the total labour force are full-time workers, 9.6% part-time and 34 seasonal[5] workers *(14)*. Adjusting these proportions to the total approximate labour force in Table 2 obtains the following:

Table 14. The full-time labour force in tobacco farming

1995	1996	1997	1998	1999	2000
435	133	245	820	5749	17 724

Next, in leaf marketing and processing there are 800 employees for 2000 and 2001. The ratio for the processing industry is, accordingly 86.2%, 10.2% and 3.6%. The adjusted figure will be 745.

The same calculations are used for cigarette manufacturing, retail and wholesale:

Table 15. Full-time employment in cigarette manufacturing

1995	1996	1997	1998	1999	2000
503	396	535	457	502	793

[5] It is assumed that seasonality in labour force means half a year of work.

Table 16. Full-time employment in the cigarette wholesale and retail trade

	1995	1996	1997	1998	1999	2000
Retail	465	257	269	351	391	512
Wholesale	458	312	517	1373	1014	775
Total	923	569	786	1 724	1405	1 287

The labour force proportion for the wholesale and retail sector is : fulltime 55%, halftime 34.7% and seasonal 10.3%.

The overall employment in the tobacco industry will be:

Table 17. Full-time employment in the tobacco industry (people)

	1995	**1996**	**1997**	**1998**	**1999**	**2000**
Tobacco farming	435	133	245	820	5749	17 724
Leaf marketing and processing						745
Cigarette manufacturing	503	396	535	457	502	793
Wholesale and retail trade	923	569	786	1724	1405	1287
Total	1861	1098	1566	3001	7656	20549

So the matter of interest constitutes 0.12% of total employment in the tobacco industry and 0.22% of the total population employed (0.07% and 0.1% in 1995 respectively).

Policy alternatives

To estimate the possible impact of a tobacco control policy on overall employment, several assumptions and statements should be made. First, the lack of statistics in Armenia means that the widely accepted estimation method, input–output analysis, cannot be used. The problem is that following the collapse of the former Soviet Union, such information and analyses are no longer available. The last available table of intersectoral balance (this was a "Soviet" description of the input–output table) refers to a country with a completely different economic structure and is not applicable for the current estimation.

On the other hand, the tobacco industry peculiarities in Armenia allow for making simpler estimates, which are still as rational as an analysis using input–output tables. This is the consequence of several specifications, which are common for the Armenian tobacco industry. The first reason for this is the small number of companies engaged in the business. It makes it possible to have a complete look at the production cycle and make reasonable assumptions. Second, tobacco production sectors in Armenia are not interrelated with those of other industries. All the raw material for tobacco production is imported. This makes the economy less vulnerable to a possible reduction in tobacco production. So the multiplier effect is reduced as much as possible in Armenia's case.

Secondly, as neither serious estimates for cigarette elasticity towards increase in prices nor for demand elasticity towards advertisement banning are done in Armenia, the relevant indexes, applicable for Armenia, should be used.

While considering the policy alternatives for tobacco industry control the alternative between smoking restriction and tax policy should be discussed. As previously stated, the

Tobacco Control Programme specialists have developed the draft law that provides tobacco control policies. While the adoption of the law is in its earliest stages, strict tobacco control measures, included in the draft law should be considered as a real alternative to a tobacco control policy. According to a World Bank paper *(15) l* the strictest measures in tobacco control (the banning of cigarette advertising) are estimated to cause a 6% reduction in demand for cigarettes.

Since in this case, reduced demand is not connected to the cigarette price, it seems reasonable that the reduction will affect the sales of both domestically produced and imported cigarettes in the same proportion as they have in the local market. Thus, if the law is adopted and enters into force, it is reasonable to count on about a 4% reduction of the market for domestic production.

Cigarette production profits are much higher than in other economic sectors (annual averages are estimated at 25%). Given this situation a company cannot be expected to reduce its resources and production volumes proportionally.

The next method to have an impact on smoking is tax increases on cigarettes. Jha and Chaloupka *(16)* have observed that "tax increases are the single most effective intervention to reduce demand for tobacco (tax increases that raise the real price of cigarettes by 10% would reduce smoking by about 4% in high-income countries and by about 8% in low-income or middle-income countries)". Armenia would fall into the latter group. Hence, it is reasonable to assess that if the Government increased taxes by 10%, the demand for cigarettes would drop by 8%. To facilitate the estimate the assumption would be that the change in demand would equally include expensive and inexpensive cigarettes.

Bearing in mind the above assumption, it appears reasonable that domestic brand demand would drop by about 5%.

To estimate the maximum possible impact of the tobacco control policy on employment, it would be assumed that the authorities are ready to apply both measures against smoking restriction simultaneously. A 9% reduction in the demand for domestically produced cigarettes could be considered. How would tobacco industry employment react to such a change in the market?

> The expenditures multiplier is estimated to be equal to about 1.7 in Armenia[6]. In the case of a 9% drop in demand for tobacco products, the freed up demand is likely to be directed to other sectors of the Armenian economy, creating additional demand in those sectors. The most preferred sectors might be food production, services, agriculture and imports (bearing in mind, that Armenia is a country with low per capita income). All these sectors, like other economic sectors possess a great potential for intensive growth. A small increase in demand for the production of any sector might not initiate extensive growth there. That is why the impact of this factor might be omitted in current research as it is estimated to be extremely low.

Tobacco farming

The households engaged in tobacco farming might be slightly affected should the single company engaged in tobacco leaves marketing and processing reduce its demand for the output of farming. Only 2.5% of the cigarettes, based on the local tobacco farming output, are being exported. The total number of full-time employees is estimated to be 17 724 persons, minus 2.5%, bringing it to a total of 17 281.

[6] Central Bank of Armenia estimations, not official

It should be noted that tobacco-farming production has grown considerably in recent years while productivity has remained stable.

On the other hand the farmers are not expected to grow only one type of plant. Moreover, as stated in Figure 3, tobacco is one of the least-demanded products in agriculture. Of course, production prepayment is a strong incentive for tobacco farming. Nevertheless, currently several newly established enterprises are becoming widely engaged in juice and canned goods production and are also prepaying for the cultivation of several types of vegetables and fruits. This can offer a good alternative for the tobacco farmer, who is being discouraged from growing tobacco.

On the other hand, about 35% of farmers in Armenia grow plants for self-consumption only. In the countryside the barter system is a common practice. Hence, if a farmer cannot obtain a contract for selling his product, or cannot find markets for his product, he may join the ones that grow crops for self-consumption.

Therefore, if a reduction in demand for cigarettes is considered, and the assumption is, that such a reduction would cause a proportional reduction of resources in the tobacco industry, a possible decline in living standards for about 1 800 farmers might be likely rather than reduction in employment.

> It also bears mentioning that the fertilisers used in agriculture are imported by the Government and, in addition, the rural population uses for the most part products they produce themselves, thus easing the possible impact of a reduction in living standards for the farmers in other economic sectors.

Leaf marketing and processing

Since the total number of employees in this sector is small, and if it is assumed that a 9% reduction in cigarette demand will cause a similar reduction in the labour force, 9% of 726 (the number obtained when 2.5% is subtracted from 745) people equals 65 persons, an extremely small number compared to the overall labour force.

Cigarette manufacturing

As stated above, cigarette manufacturing is based on raw materials imported from abroad. This is why a possible reduction in the manufacturing volumes may affect the rest of economy only by an insignificant decrease in consumption of those employees expected to be fired. Meanwhile, the manufacturing process is based on up-to-date technologies, where the productivity per one unit of the work force is high. In addition, employees' salaries here, as shown in Figure 5, are low enough not to consider the labour force the most vulnerable position in the production cycle. What is more, reduced demand may not affect the company's profits, since raw material expenses and production utilities may also decrease. Since the sector's profits are high, it is not likely that the companies will cut back on labour since it is not a serious burden for them.

Even if such a reduction took place, quantitatively speaking, the proportional reduction of the labour force is less than 100 people.

Wholesale and retail trade

This sector is probably most sensitive to changes in cigarette demand. Meanwhile, the work force involved in wholesale and retail trade appears the most mobile. It is much easier for a trader to orient towards another product than for every other employee discussed above.

There were 775 full-time wholesalers in the market in 2000. Full-time retailers were estimated at 512 persons. An average trader in Armenia usually sells more than one product. Should there be a reduction in demand it is likely that the sector will not react strongly. It is reasonable that retail traders will be more mobile than wholesalers will. Even if there should be major changes in employment, it would not affect overall employment in the country significantly.

Conclusion

While it is entering a new stage of development, the tobacco industry in Armenia has not yet developed enough to be considered as a key industry in the economy. The tobacco industry's role should not be overestimated. Appropriate statistical or economical analyses should be performed periodically to track trends in the industry's development and at least to represent the correct situation there. The lack of statistics is a serious obstacle to clearly assessing the industry's role in the Armenian economy and the alternative cost of smoking.

Analysis of the economic consequences of the tobacco control policy has not yet been conducted. The reason may be the uncertainty in the interpretation of tobacco control as a tool for smoking regulation. Yet, tobacco control is mainly considered in light of smoking's impact on health. Neither the economic consequences of smoking reduction in general nor the employment issue in particular have been analysed. Decisions on implementing various smoking-restriction campaigns are currently being made one-sidedly, not considering all the measure's possible effects.

The current sector review, with its albeit limited analyses and statistical evidence, shows that employment is low enough and the cigarette manufacturing profit rate high enough to conclude reasonably that employment could moderately change should the Government accept a strategy that would reduce smoking prevalence as much as possible.

However, this is a rather general conclusion since it is based on logic rather than on econometric analysis, due to the aforementioned difficulty in coming up with accurate statistical sources.

Policy advice should be, of course, to implement a strict, consistent tobacco control policy. The draft law on tobacco control is a serious step restricting smoking in the country. The adoption of the Law in the Parliament and proper implementation of the principles included in the Law will be advised.

Assessing budget revenues, not perceived as a target for current review, is, however, an important issue to take into account when deciding on tax increases on cigarette products.

Putting aside this budget concern, the most important activity of research institutions and State authorities is to come up with an agreed smoking-reduction policy that is well targeted and comprehensive and will address all aspects of a smoking reduction policy. Such

a concept would set a framework for further studies and specifications of concrete actions to take to achieve its goals.

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Tobacco control policies and tobacco industry employment in Bulgaria

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Background

Database

This report aims to systemize the existing information on the tobacco industry. It particularly emphasizes first, the impact of the tobacco industry on employment and its link to it at the national and regional levels and second, the impact of health control and smoking restriction policies on the production and consumption of tobacco and tobacco products. It should be noted that a more in-depth study focused on the labour market and employment perspectives has not been conducted in Bulgaria to date. National statistics have only been gathered and processed showing comparable annual data on the total volume of tobacco production, the fields cultivated and average crop as well as on the volume of cigarette production in kind. The sale of tobacco goods is normally included under the aggregate Food, Drinks and Tobacco Products heading. There is also a lack of official statistics on employment in tobacco cultivation and on production and sale of cigarettes. In addition, it appears that there have been no sector-specific studies done at the academic or industry level on the real and projected dynamics of employment in the tobacco industry and its sectors.

Such factors highlighted the need for gathering information from various sources for the purposes of this report. These sources comprised:

- The National Tobacco Fund, which administers and coordinates the production of tobacco leaves in the country as a whole and in the various regions on behalf of the State;
- The Bulgartabak Holding, which has a monopoly in cigarette production;
- The Regional Statistics Offices in those regions where tobacco leaf and cigarette production is concentrated;
- Specialized research on food consumption and food products (in areas where cigarette smoking is concerned), conducted by trade unions;
- An inquiry conducted through the national "Alfa Research" Agency on citizens' attitudes towards smoking, its restriction and related health control measures.

Despite these efforts, the information in this report is incomplete. It has been difficult to establish boundaries between various subsidiary activities (e.g. seedlings, fertilizers and packing suppliers) within the tobacco industry as well as determine turnover and employment. It is also hard to grasp and define the specialized wholesale and retail trade network that deals with tobacco products. An additional problem is the fact that part of the trade is illegal and is clearly smuggled goods. This would suggest the need for future studies on Bulgaria's "grey" and "black" economy.

Goals of the analysis

In line with the report's requirements, the analysis should achieve the following goals:

- to provide information that will attract policy-makers' attention to an issue scarcely studied to date, namely the impact of tobacco control measures on tobacco production and employment in Bulgaria.
- to suggest a new, different and balanced approach when assessing how big a role the tobacco industry plays regarding employment, national income and Bulgaria's standard of living; and
- to outline the framework for a more efficient policy that would reduce the demand and consumption of tobacco products in a country with high smoking and tobacco consumption rates.

1. Overview of the tobacco situation

1.1. Tobacco production

Traditionally, tobacco production has been one of Bulgaria's largest economic sectors. This is due in part to the country's soil and climate as well as to decades of applied policy, particularly following World War I. The tobacco sector plays an important role in job creation and income generation for the population in over one third of the country's 28 administrative regions. It also is a major exporter and contributes heavily to the national budget.

1.1.1. Tobacco leaf production

The development of the tobacco industry in Bulgaria began in the early 20th century with the exclusive cultivation of oriental tobacco brands. Later, following world trends, light-brand production increased, although oriental brands continued to be Bulgaria's staple product. As seen in Table 1, some 13 000 tonnes, i.e. about 30%, of the 39 000 tonnes of tobacco produced in 2001 were the light brands Virginia and Burley.

There are 15 different geographic areas in which the oriental tobacco type is cultivated, depending on the technical and commercial qualities of the tobacco[1] and each of them has several brands, the total amount of which is 30. The growing of oriental tobacco is concentrated primarily in three very large areas: the north-eastern, central-southern and south-western regions of Bulgaria.

[1]Origin signifies the geographic location from where a particular brand comes. For example, "Jebel" (one of the oriental tobacco type brands) comes from the region of the Central Rodopy mountains.

As Table 2 shows, 94% of the cultivated oriental tobacco areas are concentrated in these regions (more than 80% in central-southern and south-western Bulgaria, and 14% in the north-eastern areas of the country). About 88% of the country's tobacco is cultivated in those regions, including 67.5% of oriental tobacco.

As a rule, oriental brands are typically grown in the country's mountainous and hilly regions, with shallow, erosive or uncultivated soil. This, along with the fact that tobacco is a plant that can be grown repeatedly in one and the same place and is extremely labour-intensive, has brought about tobacco cultivation in a number of densely populated areas with little agricultural land. In Southern Bulgaria these areas are the Blagoevgrad, Smolian, Kardjali and Haskovo regions. Until the early 1960s tobacco production was the primary economy in these regions. Later, lead-zinc ore production, woodworking, stock-farming and mountain tourism began to develop and in the 1980s other sectors like textiles and dressmaking emerged, spun off from larger enterprises in the interior region.

The large-leaf tobacco brands of the Virginia and Burley type are cultivated in northern Bulgaria. In the north-east, however, mainly in the Razgrad, Targovishte and Shoumen regions, oriental tobacco cultivation predominates. These are regions where tobacco production takes on a complementary character, for the economy as a whole, and for the population's employment and income in particular.

Based on the geographic origin of the brands and tobacco, there are 21 distinctive tobacco-cultivating regions in the country, including 103 municipalities with over 1 200 towns and villages. This actually means that tobacco cultivation comprises nearly 40% of the economy of Bulgaria's municipalities.

The year 1976 saw the highest rate of tobacco production in Bulgaria, with 142 600 tonnes of oriental tobacco and 25 000 tonnes of large-leaf brands. Since the early 1980s, however, there has been a steady decline in tobacco leaf production. On the one hand, this has been the result of a general crisis in the State-run economy; but on the other, the cause for the abrupt, nearly threefold decline has been the severe recession and restructuring already underway in the early 1990s. The reduced production of tobacco leaf is due to the following factors.

- Ethnic conflicts in Bulgaria at the end of the 1980s. Traditionally, the Muslim population has grown tobacco leaf in Bulgaria. In the late 1980s, when the Jivkov regime forced Muslims to change their names, some 300 000 of them emigrated to Turkey, thus destabilizing tobacco cultivation. While some of this population has since returned, former production levels have not been met;
- The nearly threefold decline in profits due to forestalled growth in production expenditures compared with the increase in purchase prices;
- The loss of traditional markets for Bulgarian tobacco and cigarettes, mainly those markets of countries belonging to the former Council for Mutual Economic Assistance;
- Poor management. The State tobacco monopoly does not respond flexibly to changing market realities;
- Old or obsolete equipment used for the manipulation-fermentation process and in the production of cigarettes; and
- Huge material expenses and energy consumption.

It is difficult to include among these factors an increased control over trade in tobacco products, when this element in Government policy has not been particularly present during the period under review. An overview of the dynamics of the quantity of tobacco cultivated, the number of tobacco planters and the areas under cultivation is presented in Table 2. It illustrates that the volume of cultivated tobacco during the last three to four years has been steady, varying between 32 000 tonnes and 40 000 tonnes annually. The 38 700 tonnes produced in 2001 is far below the State quota of 63 000 tonnes. The situation is similar with cultivated tobacco fields. In 2001, there were 115 000 fewer than expected. The average tobacco yields are relatively steady and low compared to world standards.

The above situation is largely due to poor technological and organizational standards. The application of modern agricultural equipment to tobacco production in Bulgaria is an exception rather than the rule. Because of insufficient financial resources artificial fertilizers are hardly used. The changes in the number of the tobacco cultivators and accordingly the cultivated tobacco areas are directly correlated to the quantities of tobacco purchased the previous year. It is important to note that the selling of tobacco leaves has been an ongoing problem for tobacco producers during the last seven to eight years, which is one of the reasons why the entire production normally does not meet the State-defined quotas.

Before 1990, more than 300 000 people were employed in tobacco growing, meaning some 80 000 families. In the 1990s the number of tobacco leaf producers ranged from 36 611 (about 150 000 people) in 1995 to 88 310 (about 260 000 people) in 1997. In 2001 the number of officially registered tobacco planters, i.e. those who officially stated tobacco leaf growing as their exclusive and only source of income was 55 878, or about 220 000 people.

1.1.2. Marketing and processing

The purchase of tobacco in Bulgaria is authorized by State dealers. At the beginning of every production year (before 1 March) the dealers sign contracts with tobacco planters. This activity is registered and controlled by the Tobacco Fund at the Ministry of Agriculture. The production and purchase contracts contain certain obligatory clauses, stipulated by law, such as the requirement that the dealer receive a 20% advance payment for the total amount of the agreed production, calculated on the basis of the minimum purchase price. The purchase of the tobacco should be completed no later than 1 March of the year following the year of production.

The tobacco planter and dealer determine the tobacco's quality during the time of purchase and certain quality standards that must satisfy three criteria are applied. To a great extent these standards and other criteria are harmonized with EU requirements.

Tobacco leaf processing falls into two phases. The first phase is during the time the leaves are gathered, assorted, dried and packed. The second phase is in industrial processing plants. There are 11 such industrial processing and sale enterprises throughout the country. According to the trade unions, about 11 000 people are employed in industrial tobacco processing and wholesale enterprises.

1.2. Cigarette production

The State has monopolized cigarette production and trading in Bulgaria, since 1947. These activities are primarily carried out by the Bulgartabak Company, which exercises

control over the production, export and import of industrially processed tobacco and cigarettes.

Following the adoption of a new Act on Tobacco and Tobacco Products in 1993, a legal framework was created for defeating this monopoly, though practically speaking, cigarette production and trading still falls within the Bulgartabak system. There is only one cigarette manufacturing plant outside this system. There are nine cigarette manufacturing plants, which are situated in Sofia, Blagoevgrad, Vidin, Pleven, Shoumen, Stara Zagora, Haskovo, Assenovgrad and Plovdiv. According to information provided by the factories themselves, they employ about 5 000 people. They have a production capacity of 80 000 tonnes of cigarettes annually, which has almost never been achieved during the last 10 to 12 years.

The period 1994–1996 marked the highest rate of domestic cigarette production at annual rates of 53 500 tonnes, 74 600 tonnes and 57 300 tonnes respectively. This period was followed by a persistent decline in cigarette production. During the last two to three years production has varied between 25 000 to 26 000 tonnes. This, of course, does not bring about a reduction in smoking. As a result of delayed efforts to reduce exports, the domestic tobacco-product consumption rate from the late 1990s to 2000 was considerably higher than during the first half of the previous decade. In the last two to three years it has been about 22 000 tonnes annually. Not taken into consideration is the increased import and consumption of cigarettes produced in other countries.

Regarding domestic consumption, the scale of cigarette smoking among different social groups is significant. A national survey designed for the purpose of the report and implemented by Alpha Research Agency has shown that the level of cigarette consumption is relatively high and stable. Of the population over 18 years of age, 39.2% are regular smokers, with only 8.5% having given up the habit, primarily for health and financial reasons, and only 0.2% as a result of public campaigns against smoking. The smoking restriction policy in Bulgaria is not strictly reinforced and only 23.6% of the respondents in the survey agreed that there should be tighter restrictions.

1.3. The tobacco trade

The industrially processed tobacco and cigarette trade is one of the tobacco industry's largest sectors, generating one of Bulgaria's biggest turnovers in any sector. Between 1993 and 1994, during the country's crisis, oriental tobacco exports represented 30% of Bulgaria's agricultural exports.

Virginia and Burley big-leaf tobacco brands are hardly exported at all because they are not very competitive. However, within the oriental brands, those from all origins experience a brisk trade, though the country's highest-profile tobacco brands are Jebel, Nevrokop and Krumovgrad.

For the requirements of its cigarette manufacturing industry, Bulgaria imports the following types of tobacco brands: oriental, Virginia, Burley and dark, air-dried tobaccos. The oriental tobaccos are imported primarily from Greece and Italy. Virginia is imported from Argentina, Brazil, China, the Democratic People's Republic of Korea, India, the United States of America and Zimbabwe. Burley and the dark, air-dried tobacco brands are imported from Cuba, France Italy, Nicaragua, the Republic of Korea, the United States of America and

Zimbabwe. However, Bulgaria's objective is not to increase the volumes of imported tobacco brands, but rather for its tobacco production to be increasingly export-oriented.

Oriental tobacco brands grown in Bulgaria are exported mainly to the Commonwealth of Independent States (CIS), the Eastern Mediterranean Region countries, the European Union Member States, the Republic of Korea and the United States of America. Particular importance is attached to trade and commerce with European Union Member States. From a territorial point of view this market is close by and well structured, which is key, considering Bulgaria's forthcoming accession into the European Union. Table 3 shows that the import of industrially processed tobacco from the Community countries in 1995 and 1996 exceeded exports in that area. Presently, Bulgaria covers only one-third of the export quota for the European Union countries.

Cigarette exports during recent years have diminished dramatically, comprising 42 627 tonnes in 1992 and dropping to 4 101 tonnes in 2001. Cigarettes are exported mainly to the countries belonging to the CIS countries and the Eastern Mediterranean Region.

The export of tobacco product is considered to be one of the States major revenue sources, as long as the exports are excisable goods and the final price includes 70% excise and 20% VAT. Table 4 illustrates the dynamics of revenues and profits for the 1998–2000 period for Bulgaria's five most profitable cigarette manufacturers.

In assessing the volume and dynamics of cigarette production and sales, the "grey" economy must also be taken into account. In recent decades the illegal import and re-export of tobacco goods has become a thriving business. There are no complete or precise data on the exact or real amount of cigarettes traded. But according to experts, non-duty paid goods of over US$ 1 thousand million pass through customs annually. Cigarettes and alcohol make up about one-fifth and one-fourth respectively of this amount. There is also a flow of tobacco goods exported to the Arab countries with semi-legal licenses, but again, no precise data exist on this.

A new trend has emerged in the production and sale of tobacco goods—the export of a portion of these activities to other countries and the establishment of newly created joint ventures. Five similar enterprises are situated in Russia (Belgorod, Tver, Poltava, Sochi, Kaliningrad); there is one venture in Romania and one in Turkey. US$ 4 million is believed to have been invested in each of these enterprises. However, it is nearly impossible to obtain information on these joint ventures' production performance, taxes and profits.

1.4. Parameters of the tobacco policy

1.4.1. Quotas, prices and subsidies

Tobacco leaf production has always been specially regulated and encouraged by the State. This is first achieved through the State's quota system for tobacco leaf production. For example, for the year 2000 the State's quota was 50 000 tonnes. However, in recent years Bulgaria's tobacco leaf production has consistently fallen below the set quotas. In 2000, production fell short by 18 000 tonnes. If the 2001 quota is met, its value, calculated on the basis of the average real purchase price for the previous year, 1999, will be equal to 176 292 794 levs, or about US$ 85.2 million. It bears noting that this amount does not include value-added tax (VAT), since the purchase of tobacco is VAT free.

Every year the Government of Bulgaria defines the minimum purchase price of tobacco. It is a common practice that real average prices are lower than the minimum planned prices. This is due to the lower quality of the tobacco leaf that the tobacco dealers buy from tobacco planters. As a result of this transaction, tobacco planters are supposed to work at a loss. This has been the main source of tension and conflict over the last 12 years in the tobacco leaf cultivation sector.

To resolve this problem the State has introduced a mechanism of premium granting to tobacco planters. Premiums are given for every kilogram of tobacco sold and the amount varies over the years. The premium is not a part of the purchase price. It is an additional benefit granted by the State directly to the tobacco planters. The State premium resource is funded through 30% of the tobacco product excise revenues.

Along with the premiums, in compliance with the Tobacco and Tobacco Products Act, the planters can be granted targeted financial aid, which is a part of the tobacco minimum purchase price. (The tobacco dealer pays the tobacco planter an amount equal to the minimum purchase price minus the targeted financial aid per kilogram of tobacco leaf.)

Figures for 2000 showed that the total amount of financial flow given in various forms to support tobacco planters is equal to 221.5 million levs, or over US$ 100 million.

In 2000 the subsidies were made up from two major sources: the State—some 60 million levs and the tobacco dealers—152.1 million levs.

1.4.2. State regulation of tobacco cultivation

Despite the development of market relations in the Bulgarian economy, the State has retained its role in regulating tobacco cultivation. This is due to social factors related to employment and the income of a certain sector of the population, mainly in the Muslim regions. An additional reason for State regulation is Bulgaria's need to adjust to European criteria and standards. Bulgaria's negotiations with the European Union on two of the chapters—agriculture and social policy—demonstrate that the State should take additional responsibility concerning tobacco leaf and cigarette quality control. It will take years to resolve this issue. The Bulgarian Government's initial response at the outset of the negotiations was to introduce a transition period in tobacco-product quality control.

Regarding the domestic front, the State regulates tobacco cultivation through a series of legal acts that encompass:

- The Tobacco and Tobacco Products Act, adopted in 1993 and frequently amended;
- A regulation on the Application of the Tobacco and Tobacco Products Act, adopted by a Decree of the Council of Ministers;
- An ordinance on the activities, revenues and expenditures of the Tobacco Fund at the Ministry of Agriculture, adopted by a Decree of the Council of Ministers;
- A methodology for defining the minimum purchase prices of tobacco and imposing indexes, adopted by a Decree of the Council of Ministers and others.

The State also applies an additional set of instruments for regulation:

- A licensing regime for the persons to be cultivators of the accorded crop;
- Required quantities, types, origins, brands, regions, municipalities, towns and villages, where tobacco is to be cultivated (cultivation quotas);

- Specified quality standards for the criteria used to determine tobacco quality applied at purchase;
- Free supply and donation of tobacco seeds for cultivation;
- Obligatory agreements for cultivation and registering of all contracts, planters and traders;
- State definition of the trends for developing and funding the selection of new tobacco brands and brand preservation;
- State implementation of a licensing regime when determining the persons to purchase and trade industrially processed tobacco.

State tobacco industry regulation has recently introduced new smoking restrictions and requirements to reduce the sale of tobacco products. Since 2000 a special ordinance has required that warning labels be placed on tobacco product packages indicating the nicotine and tar content in the cigarettes, and that smoking is harmful to health. The ordinance is being amended to require that the size of the warning label, currently 5% of the package's size be increased to 20%.

There are legal regulations on prohibiting the sale of cigarettes to minors under the age of 16, prohibiting the sale of cigarettes in school and kindergarten areas, as well as smokers having to obtain the consent of non-smokers at work and in public spaces. However, the latter regulations are not strictly observed. There are separate initiatives where employers prohibit smoking on the premises of organizations they manage.

The Tobacco and Tobacco Products Act authorizes the Council of Ministers to determine and publish retail prices on tobacco goods. In compliance with the regulations, producers and suppliers can introduce suggestions for changing prices to the Ministry of Economy, Trade and Tourism. The Ministry delivers the proposals to the Government for approval and publication. Since July 1996 retail prices and manufacturing prices, as well as import prices have been published in the Official Journal. The retail price includes manufacturing expenses or import expenses, the manufacturer's/importer's profit, customs duties, excise tax, VAT and a 10% trade discount. Fixed prices are printed on the excise labels. The sale of cigarettes at prices different from the fixed prices is forbidden. The sale of cigarettes, cigars and chewing-tobacco, which are not included in the attachment to the Ordinance of the Council of Ministers on price definition is also prohibited. Because retail prices and all elements subject to discount from the retail price to achieve the manufacturing price, are determined by law, practically speaking, manufacturing prices are also regulated by the State. The 10% trade discount from the retail price is the maximum allowed to wholesale and retail dealers.

Excise tax is paid through purchase of excise labels, which must be paid at purchase or during a 60-day period if there is a bank guarantee presented. Cigarettes allocated for export are excise free. VAT is imposed a single time on the producer—the retail sales chain in the amount of 20% of the manufacturing price plus the excise.

Tobacco taxes are a major source of revenue in Bulgaria. In 2001 tobacco tax revenues amounted to 1.22% of the GDP, 5.77% of total Government revenues, 7.13% of all tax revenues, and 30.64% of excise tax revenues. These figures are a bit less compared to 2000 but this is due to the growth in GDP, total Government, tax and excise tax revenues. The absolute amount of tobacco excise tax revenue grew from 319 848 thousand levs in 2000 to 362 124 thousand levs in 2001.

2. Tobacco industry employment

2.1. Research and information

As previously noted, during the past 15 years there has been no specific research on the employment dynamics in Bulgaria's tobacco industry. This is due primarily to the fact that the country has no particular sector policy or national industrial strategy.

From 1990–2001 economic reform in Bulgaria mainly took the direction of restructurization, privatization and the development of market institutions. Underlying these reforms is the concept that the "invisible hand" of the market will transform the inherited national industrial structure. However, a weakness of such reforms has been the lack of a social strategy, including programmes that would provide practical resources to create new forms of employment.

Civil society has not created pressure for control over the production and trade of tobacco products so as to reduce the harmful effects of smoking. Legal measures that have been introduced have grown out of the need to harmonize national legislation with the international practices rather than from an expression of a domestic strategic vision.

Two specific employment studies in the early and late 1990s respectively were conducted in Bulgaria. However, these studies do not contain any particular analysis and evaluation of the dynamics in the tobacco industry. For this reason the regional information proved to be more interesting and reliable, since those employed in tobacco leaf cultivation are concentrated in certain strictly defined areas.

2.2. Tobacco industry employment and general employment

Tobacco industry employment assessment is based on the officially registered number of tobacco cultivators, some primary information from tobacco producer organizations and enterprises as well as on the assessments of tobacco sector experts. Those employed within the tobacco industry in Bulgaria in 2001 include:

- 55 900 people directly employed (as a main activity) in tobacco leaf cultivation[2]
- 11 000 people in marketing and processing;
- 2 000 people in supplementary activities related to industrial processing of tobacco;
- 5 000 people in cigarette production;
- there are no precise data on cigarette trading due to the broadly applied practice of selling cigarettes along with other goods and products;
- some 3 000 people in other activities related to the tobacco industry, namely the trade and supply of seedlings, fertilizers and substances, etc.

The total number of people directly involved in primary and auxiliary tobacco industry activities is about 77 000, or nearly 10% of those employed in agriculture and 2.8% of those employed in the country as a whole. The relatively low percentage of people employed in tobacco-related activities within the country overall varies considerably, depending on the specific region of the country.

[2] These are officially registered tobacco leave producers, whose main source of income are tobacco growing. Most of them have other agriculture activities like gardening, or stockbreeding, which are subsidiary.

There are 650 000 people registered as unemployed in Bulgaria or 17% of the population that is economically active. But actual unemployment is over 25% with distinct regional and age fluctuations. A rapid comparison of the number of registered tobacco planters in the different regions and municipalities and the number of employed shows a very different picture. Thus, for example, the number of registered tobacco cultivators in the Karjali region represents 21% of the number of people employed in the same region. In Yambol it is 14.6% and in Blagoevgrad, 11%, etc. However there are more dramatic examples for certain municipalities in these regions.

A more detailed employment analysis shows the several peculiarities and trends. First, employment in cigarette production following staff restructuring and optimization has reached a comparatively stable level. It is expected that this staff of 5 000 will not be reduced for at least three years as a result of the forthcoming privatization of the cigarette producing factories. It should be borne in mind that in compliance with the privatization law, every investor must retain their employees for this period of time, after which they may cut staff after consulting with the trade unions. Secondly, the number of registered tobacco planters doesn't reflect the real number of employees in tobacco production. Experts believe it is five to six times larger than the number of those officially recorded. This is due to the so-called family organization of labour.

The Muslim population predominates in the tobacco cultivating regions. The entire family, including children and the elderly, as a rule participate in the planting, gathering and basic tobacco processing. It is a common practice in Bulgaria for the men from the Muslim regions who are employed in various towns, to return home for the season of hard work—the planting and gathering of the tobacco leaf.

2.3. Regional and ethnical unemployment

Typically, those regions experiencing an unemployment crisis in Bulgaria are situated in the country's north-west and south-west and in parts of the country's centre and north-east. In north-western Bulgaria (Montana, Vidin and the western outlying districts—Pernik, Kyustendil and Blagoevgrad) the collapse of heavy industry, namely mining, the chemical industry and electronics, among others is largely responsible for the persistent unemployment in those regions.

Those regions where tobacco production is a major source of employment are situated in the mountainous and semi-mountainous regions of southern Bulgaria. There, alternative employment to tobacco production, inherited from the country's planned economy, included mining, the woodworking industry, stockbreeding, and small, subsidiary enterprises in the tailoring and textile industries. The collapse of lead–zinc ore mining and processing led to a loss of more than 10 000 jobs in that industry, which was the source of unemployment for men.

The ongoing decline in tobacco production and the 10-year recession has resulted in acute unemployment. In the marginal districts (municipalities on the border of Greece and Turkey), where tobacco cultivation used to exist, more than 50% of the entire population is unemployed. In the mountainous and semi-mountainous regions inhabited by Muslims there are municipalities where the unemployment rate has reached about 80%–90%. There is really no other work available and people live on social benefits and the pensions of the elderly, as well as on occasional money transfers from relatives living abroad. Major unemployment within certain ethnic groups periodically causes social and political unrest. It

has found expression in the numerous revolts of tobacco planters, hunger strikes, road blockades and attacks on administrative buildings, to give a few examples.

One ethnic party, the Movement for Rights and Freedoms (MRF), comprising members of the Turkish community, has focused its policy on the unemployment issue in those regions. Following the elections in June 2001, the MRF became a coalition partner of the governing party (the National Movement Simeon II). It now exercises administrative influence in the typical tobacco-cultivating regions as well as in the Ministry of Agriculture and Forests. Thus, in the next four years, it is expected that there will be active political lobbying in defence of tobacco planters and local cigarette production.

2.4. Alternative employment

After 1998, the first attempts were made to expand and apply a new employment strategy and programmes in those sectors and regions in crisis. Employment in the cigarette-manufacturing industry and tobacco cultivating regions is affected by the following measures:

- First, the launch of micro-crediting schemes. In the regions of Smolian and Kardjali there is an operating micro-credit fund financed by the "Open Society" Foundation. It gives priority to small projects for family business;
- Second, a guarantee fund, which is already active in two regions, one of them being Razgrad region, which cultivates tobacco. The fund's resources are used for bank guarantees to obtain small investments and circulate credit to small entrepreneurs and the self-employed;
- Third, regional alliances for new employment. These are trade companies established with the participation of municipalities and private companies from regions experiencing high unemployment. Included in the scheme are 22 municipalities, one-third of which are from tobacco cultivating regions;
- Fourth, business incubators for developing entrepreneurship in the agriculture sphere. They have been created in nine venues in Bulgaria.
- Fifth, a national Government micro-crediting programme. The most ambitious of the projects, it was launched in the beginning of 2002, with 100 million Levs (US$ 50 million) of the State budget allocated for this purpose. This programme is aimed at creating 20 000 new permanent jobs.

The above-mentioned initiatives and others, however, cannot in the short term substantially improve the labour market situation, particularly for the regions in crisis. For this reason, in expanding tobacco product consumption restrictions and tobacco production reduction measures, a gradual, step-by-step strategy should be applied. The encouragement of small- and medium-size businesses and self-employment in the tobacco-cultivating regions can do much to encourage prosperity. From this perspective, those sectors likely to flourish with this encouragement and support are tourism (especially country, mountain and eco-tourism); traditional crafts; tailoring and dressmaking, which would alleviate the problem of women's unemployment, and services and infrastructure.

3. Policies for control over tobacco product consumption and employment

3.1. Input–output analysis

Preliminary analysis of initial information suggests that Bulgaria would fall into the third category of countries examined in the present methodology, or Group 3, which produce about as much as they consume. They are called "self-contained" countries. The effect of tobacco control policies on employment in these countries should involve two main trends: reduced employment in the associated sectors resulting from reduced consumption, on the one hand, and increased consumption of other goods and services, generating new employment on the other. Thus, the assessment of the net impact of a tobacco control policy on national employment depends on the magnitude of the two effects.

While implementing the methods discussed for an analysis of the impact of tobacco control policies on industry employment we used 1999 data. This was the latest data provided by the National Statistics Institute. The inter-industry transaction matrix used contains data on the inter-sector relations in values and figures in thousands of levs (Table 6). Tobacco cultivation is considered part of the general agricultural sector production. Equal coefficients with no changes are used in the direct requirement matrix. The authors' team realized that this means resorting to a certain amount of estimation but it is extremely difficult and expensive to find the coefficients for the sub-sector by establishing and processing new primary statistics. The country creates broader matrixes for inter-sector relations every five to six years. The latest matrix goes back to 1996. Since between 1996 and 1997 inflation was high in Bulgaria and thus there was a devaluation of the Lev, we believe it is inappropriate to apply this particular matrix.

The analysis conducted demonstrated that the general multiplied impact of a reduction in tobacco goods consumption would mean a loss of 7 554 jobs, while an increase in general consumption in an unaltered structure of the end consumption would lead to an increase of 1 987 jobs. This shows that a general effect of the impact of a decrease in 5 567 jobs could be expected. Regarding the domestic front, unemployment would increase by 0.001802%, that is, by less than 0.2%. The end result can be explained mainly by the fact that the extent of ultimate labour consumption typical for the reduced sub-sector is higher than the average for the country. The generally unfavourable effect is due to the different average employment rates in the sectors under review. In Bulgaria's case, tobacco production (which is also true, though less so for tobacco products as well) is characterized by a significant amount of labour consumption that is higher than the country's average, the industrial sectors and even the service sector.

The methods used for the review through an input–output analysis are extremely interesting and could be even more successfully applied if complemented by additional research and quantitative analysis. They would eliminate the need for certain tentative conclusions and would furnish more precise results.

One of the study's development trends is related to exploring the answer to the question of how the accumulated saved resources could be spent after decreasing tobacco product expenditures. It is assumed that their distribution will follow the structure of the national consumption by sectors, sub-sectors and spheres of activities. Such an assumption is relatively correct when speaking about a chosen scenario with only 10% reduction. It is relatively true from the perspective of the current consumption situation in Bulgaria, as long

as the very low incomes, that meet only basic needs do not seriously differentiate, on the one hand, and on the other, a huge number of the smokers have average or low incomes.

It would be useful to do an in-depth marketing study among the different smoking intensity groups and to divide them into segments according to major indicators like age, income and profession. Alongside, useful information could be gathered on stimulations, motivation trends, methods for personal influence aiming at quitting the consumption of tobacco products, as well as initial information on the way to allocate the resources saved. This information is essential, as the analyses concern a rather peculiar reason for consumption growth and its structure—an elimination or reduction of a certain other type of consumption.

It could probably be assumed that the higher the incomes of those who have quit consumption of tobacco goods, the higher the extent of their incomes spent on services, where the higher labour consumption rate would bring positive results for general employment.

In conclusion, the results of the analysis show that a 10% reduction in tobacco product consumption in the country cannot have a significantly unfavourable effect on general employment. Despite extremely high unemployment, particularly in certain regions, where tobacco cultivation is the one and only source or one of the few sources of income for the population, imposing a smoking restriction policy is an essential task. Furthermore, many of the positive effects of this policy such as improving the quality of life, reducing the rate of illness and sick leave, extending life and reducing social expenditures that are not touched upon, are extremely valuable.

There is one extremely important circumstance related to the assumption that the growth in the consumption of other goods and services that would result from reducing smoking and other tobacco product expenses would lead to a generation of new jobs. Unfortunately, this scenario would not necessarily automatically follow, It depends on the investment arena for the various sectors, which is severely hampered and risky in Bulgaria in that the country has experienced considerable difficulty with a lack of fresh money and availability of capital.

3.2. Perspectives and scenarios for control over the consumption of tobacco products

3.2.1. Forthcoming privatization

Privatization of the entire State cigarette production industry in Bulgaria is forthcoming. The move toward privatization of the control of shares of the State-owned Bulgartabak Holding began in early 2002. Twelve candidates put themselves forward as investors in this sector, most of them huge transnational companies. Out of these, four companies submitted an offer. The first tender took place at the end of July and the deal was expected to be finalized at the end of September 2002.

In compliance with international agreements signed by Bulgaria with the International Monetary Fund (IMF) and the World Bank, the privatization of this industry sector is unavoidable. The transaction is expected to affect an increase in monetary revenues for improving the country's balance of payment. Nevertheless, after privatization the problem of control over cigarette and tobacco production will depend on international corporations and

their policies. There is insufficient experience in the dialogue and partnership with similar organizations in Bulgaria to date, especially concerning trade unions, civil structures and local authorities, as well as representatives of public health care policy.

An important factor in the new configuration of forces will also be the traditional local tobacco lobby, which has its representatives in Government, parliamentary circles and political parties.

3.2.2. Trade union and sector unions

Among the most active agents in creating employment and controlling policy are the tobacco industry's labour and management organizations. It is typical for Bulgaria that both before the reforms began and today these agents have preserved their structures and parameters of influence.

Trade union organizations are established in all cigarette-manufacturing plants, united at the national and sector level. Until now, whenever attempts were made to restructure and reduce staff, trade union organizations traditionally exerted pressure to preserve jobs. Some industrial actions have also been undertaken. Regarding the Labour Code and current practice, restructuring programmes are discussed at national level, negotiated and agreed at sector level and developed concretely in the collective labour agreements within the tobacco holding system and cigarette manufacturing facilities. Thus, any scenario for reinforcing control and further reducing employment can be successful only if negotiated through the trade unions.

There are four tobacco producer organizations, which are assigned regionally. The most significant one is the established Haskovo National Union of Tobacco Producers and Dealers. It has over 25 000 members, cultivators of oriental and big-leaf tobacco brands from all of the country's regions. It is the most powerful lobby, playing an active role in creating price, tax, export and import policy in the recent years.

Within the entire creation of a policy control mechanism over the consumption of tobacco products the most unstructured segment is the one that represents the interests of civil society and public health. Perhaps this should be the sphere that most actively develops initiatives, proposes special education programmes and know-how transfer, harmonizes legislation and provides public information to citizens on tobacco's harmfulness to health.

Little has been done with those people directly affected by smoking and tobacco abuse in Bulgaria and this problem is becoming increasingly acute. Among consumers of tobacco goods, Bulgaria ranks second highest in Europe in its percentage of juvenile smokers. Campaigns undertaken by the Ministry of Health as well as by certain specialized foundations are rare and not terribly efficient. Anti-smoking programmes are also rare and without resources.

Conclusion

The information gathered for this report, the data available and expert evaluations made enable us to reach the following initial conclusions on employment trends and public reactions to smoking control policies:

First, without introducing particular restrictive measures, Bulgaria has naturally experienced a three to fourfold reduction in tobacco production. This is due to the country's economic crisis, which has primarily affected the traditional tobacco cultivating regions. The population has borne the psychological burden of this shock effect to a greater or lesser extent, which should be taken into account by policy-makers. It paves the way for introducing new measures against tobacco product consumption, mainly in other sectors of the tobacco industry, specifically cigarette production and trading. The key is the wholesale and retailing sectors, as well as the consumption of tobacco goods.

There are certain potential public attitudes in Bulgaria in favour of introducing a whole package of measures to fight the harmfulness of tobacco, especially among the young generation. Indicative of this is the fact that the population's health profile has declined abruptly during the last decade, and pulmonary diseases and cancer, which are directly linked to tobacco product consumption, rank among those diseases Bulgarians suffer from the most.

Secondly, incomes in Bulgaria are among the lowest in Europe. In 2000 the average income per capita per household was 140 levs a month. Meanwhile, expenditures per capita per household were twice as much. The urgent need to increase income levels and restructure consumption is becoming more acute and could be used in the new tobacco consumption control policy. It is a fact that regardless of how low people's living standards are, they do not reduce their smoking. Some 4%–5% of the family budget has gone for cigarettes and alcohol during the last five years. Despite the theory that during an economic crisis and social stress, such behaviour is unavoidable, an active approach to expanding and implementing a social and health policy would provide a positive mid-term result.

Third, Bulgaria urgently needs specialized research on the health and social consequences of smoking restriction measures, as well as a systemized programme for working with the young people and other risk groups. Specifically, these groups are women, low-skilled workers and intellectuals.

Fourth, additional pressure on behalf of the health authorities and organizations as well as society is needed to reinforce the measures for limiting illegal trading of tobacco goods. To date, measures against tobacco product smuggling have been inadequate. The new Bulgarian Government is reinforcing customs control and is striving to improve the customs administration and information system. However, the impact of these measures will only be felt at a later stage. Furthermore, the smoking restriction problem turns out to be related to anti-corruption practices and legislation, with which Bulgaria doe not have much experience. This is another challenge to the general policy of control and reduction of tobacco product consumption in Bulgaria and the re-export of tobacco products from the Bulgarian territory. It is evident that again a special programme must be developed to support institutions and experts, including actively involving European advisors.

Tables

Table 1. Tobacco production in Bulgaria for the period (1935–2001)

Year	Total (thousands tonnes)	Oriental (thousands tonnes)	Big-leaf (thousands tonnes)	% of Oriental
1935-1939	39.5	34.5	-	100
1950-1954	43.2	43.2	-	100
1965-1969	111.9	109.4	2.5	98
1970-1972	151.3	1383	13	91
1976	167.5	142.6	24.9	85
1980	113.1	92.1	21.0	81
1990	79.2	58.9	20.3	74
1993	58.1	47.6	11.15	81
2000	33	20	13	60
2001	62	42	20	68

Source: Fund "Tobacco" at the Ministry of Agriculture and Forests

Table 2. Areas, production, yields and number of tobacco producers for the period of 1994–2001

Year	Areas under crop (decars)	Quantities (tonnes)	Producers	Yield (kilogram per hector)
1994	251 661	32 716	46 310	1,3
1995	144 638	18 803	36 611	1,3
1996	306 061	39 788	52 587	1,2
1997	471 530	61 299	88 310	1,3
1998	297 630	38 692	64 393	1,3
1999	265 192	34 475	47 801	1,3
2000	247 877	32 224	42 629	1,3
2001	297 692	38 700	55 878	1,3

Source: Fund "Tobacco" at the MAF

Table 3. International tobacco trade between EC and Bulgaria in the period 1995–1997

Year	Export from Bulgaria to EC	Import by Bulgaria from EC	Value of the export (thousands ecues)	Value of the import (thousands ecues)
1995	4 046	5 057	12 469	6 170
1996	4 567	9 508	12 129	9 949
1997	3 805	1 378	11 712	2 474

Source: National Statistics Institute

Table 4. Financial results of the largest tobacco companies in the period 1998–2000

Company	Incomes from sales (thousands levs)			Profit/loss (thousands levs)		
	1998	1999	2000	1998	1999	2000
Sofia - BT	61 513	64 501	74 978	5 391	5 210	7 273
Blagoevgrad-BT	190 108	183 911	203 592	25558	35 000	26 645
Sluntze – BT	45 368	40 626	41778	7 166	400	423
Asenovgrad –BT	15 956	14 719	10 314	-393	177	-6 754
Plovdiv -BT	22 601	22 588	24 519	-4 313	-631	-1 947

Source: Primary information from the local companies

Table 5. Production, export and domestic consumption of cigarettes for the period of 1992–2001 (November 30)

(tons)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 01.01-31.10
Production	47 856	32 076	53 552	74 603	57 236	43 316	33 104	25 575	26 509	21 586
Export	42 647	25 195	45 158	61 468	40 569	24 581	10 985	3 967	4 101	1 977.9
Domestic consumption	5 209	6 881	8394	13 135	16 667	18 735	22 119	21 608	22 408	19 608.1

Source: Primary information from the companies, included in the holding "Bulgartabak"

Table 6. Inter-industry transaction matrix (1 000 denominated levs, current prices, 1999)

Sectors		1	2	3	4	5	6	7	8	9	10	11	12
1	**Agriculture**	1128027	728	12	484919	16383	979	0	918	735	500	2833	96
2	**Forestry**	93	36632	0	18	1	15785	0	12	1	2	1	0
3	**Mining**	1517	18	10510	101	137	9581	42	2558	9327	86	346	90064
4	**Production of foods and drinks**	29939	776	981	16694	1169	129	488	357	1035	622	163	375
5	**Textile, leather and tailoring**	2096	412	2037	144	13308	836	124	715	358	553	949	646
6	**Processing of nonmetal minerals**	11939	635	7746	4948	1051	34187	298	10158	8078	8623	1806	1550
7	**Production of coke and refined products**	18515	155	5680	5358	1391	13199	8202	7043	10647	6245	2530	11355
8	**Chemical engineering**	23317	264	3997	558	2349	5662	1575	22160	4332	3579	437	4662
9	**Metallurgy**	550	24	2920	114	40	820	1265	614	25506	34015	2688	152
10	**Mechanical engineering and electronics**	613	109	5620	430	84	1404	841	1287	3551	45642	638	106
11	**Other industry**	519	32	590	334	180	310	411	108	814	1637	726	551
12	**Electric power, gas and water**	9438	549	14081	20151	6581	23100	19351	33775	37997	20785	2209	48256
13	**Building**	6817	762	2289	1387	1770	3202	7763	2814	4796	3505	2143	11521
14	**Trade**	44685	289	3270	6151	7962	13334	13540	2697	13915	11310	1649	7153
15	**Transport**	41345	313	19212	4184	4903	13702	5987	3435	12055	9622	1083	3993
16	**Communications**	4845	461	820	624	1477	1779	403	1318	3726	4005	274	823
17	**Health services**	874	53	89	71	68	22	92	78	32	54	69	180
18	**Finance, credit, insurance**	5304	22	1156	3149	3377	4344	7210	2908	8046	5789	815	774
19	**State Government**	341	175	46	96	37	392	0	88	47	146	4	30
20	**Other services**	20162	1052	1409	3740	2714	2305	8971	5292	5387	3414	466	1991
21	**Imported products and services**	104063	1538	41102	21627	54744	77680	393557	122340	117084	135398	5546	119409
22	**Intermediate consumption**	1455000	45000	123546	574798	119728	222752	470119	220676	267469	295534	27373	303688
23	**Value added**	1523000	24000	92666	271788	117415	112830	75289	98926	35536	213239	19543	181932
24	**Gross production**	2978000	69000	216212	846586	237143	335582	545408	319602	303005	508773	46916	485620

Evaluating the impact of tobacco control policies on employment in Egypt

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Executive summary

This study examines certain economic questions that Egyptian policy-makers should address when considering tobacco control measures. It aims in particular to study the impact on employment in the tobacco industry of policies that reduce the demand for tobacco.

This is a rather important issue because it is the main reason why many countries resist taking serious action to adopt tobacco control measures. There is a fear that reduced tobacco consumption may lead to a loss of employment. However, several studies have argued that this is an incomplete picture because the loss of jobs in the tobacco industry can be compensated for by an increase in employment in another industry when money not spent on tobacco is used for other goods and services. This could create additional jobs to offset the job losses in tobacco-related sectors (World Bank, 1999).

This study begins with an overview of tobacco consumption in Egypt, which shows that the country has the highest rate of tobacco consumption in the Arab world. While the main factors underlying the changes in consumption trends are economic, other factors contributing to the high rate include an improvement in the quality of tobacco as well as an increase in the consumption of foreign cigarettes.

This study also examines the status of the tobacco economy in Egypt. The public sector continues to maintain a monopoly on cigarette production through the Eastern Tobacco Company (ETC), the largest cigarette manufacturer in the Eastern Mediterranean Region. The ETC has a monopoly on domestic production, controlling about 92% of the Egyptian market. Domestic cigarette brands comprise over 95% of ETC's production. The remaining 5% consists of foreign brands (mainly Philip Morris and Japan Tobacco International (JTI)) manufactured by ETC under agreements with the parent companies. In 1999, the company utilized 200 metric tonnes of U.S. flue-cured from its old stock in producing its local cigarette brands.

The economic significance of tobacco in Egypt can be illustrated in several ways. Treasury revenues from the tobacco and cigarette industry have increased from EGP 2 382.7 million in 1993–1994 to EGP 3 445.6 million in 1998–1999, excluding 1996–1997 and 1997–1998. Moreover, the only State enterprise ETC achieved a significant gain in profits. ETC'S net profit was EGP 243.2 million in 1998–1999, with an increase of EGP 81.7 million over the 1997–1998 period, representing a 51.5% increase. ETC is one of the ten largest stocks on the Egyptian Stock Exchange.

With the rise in consumption, a significant increase in cigarettes sales occurred, in particular in the late 1990s. Despite the fact that Egypt does not grow its own tobacco, in recent years it has increased its cigarette exports to neighbouring countries. Cigarette exports jumped 530% between 1985 and 1994, from 200 million to 1.26 thousand million sticks. Imports play much less of a role in Egyptian cigarette market than they did during the early 1980s. There is a significant increase in tobacco leaf imports, which rose by 293% during the period 1970–1998 by 293%.

Currently, Egypt is improving the implementation of its national tobacco control campaign. Although much tobacco control legislation has been passed in Egypt, it is never enforced. That being said, health education has assumed increasing importance. In February 1999 a national campaign to prohibit the sale of tobacco to young adults and children was launched. Community participation was encouraged through several workshops and seminars.

The study's second part places tobacco industry employment within the context of the general national employment framework. Egypt's current employment outlook is characterized by inadequate labour absorption of graduate students and under-utilization of unskilled human resources. Additional issues are overstaffing in the Government sector, coupled with skill shortages, and low productivity (IMF, 1995).

Employment in the tobacco industry increased from 13 100 workers in 1970 to 15 800 in 1980, to 17 500 in 1990 and reached 17 261 in 1995. In 2000 it was estimated at 17 900 or 1% of the country's total employment. These workers are employed on a full-time basis by the industry (including production, industrial services and distribution).

Part three of the study examines tobacco control policies and industry employment through input–output analysis, taking into account the indirect effects on all the other sectors. The study estimated the direct requirement from other sectors to the tobacco industry. The foreword direct coefficient of the tobacco industry equals 0.077, but its backward direct coefficient equals 0.104. This means that this sector depends more on other sectors when its minor role in providing materials to other sectors is examined. This can be explained by the tobacco industry's type of production, which makes a final product for the consumer. So, the single-service sector receiving this product is the restaurant and hotel sector. However, the coefficient of tobacco industry to restaurants and hotels is small (0.009).

Concerning the backward relationship between the tobacco industry and other sectors, the data show that all the values of backward coefficients are small, ranging between 0.0001 for rubber and plastic products and 0.009 for food industries, except for the wholesale and retail sector, where the coefficient equals 0.01. This can be explained by the high dependence of the tobacco industry on imports to obtain inputs for production. The percentage of imported inputs to total inputs totalled 67.7% in 1991–1992.

Next, the total requirements of the other sectors with respect to the tobacco industry were estimated. Concerning the outward dependency of the tobacco Industry, its direct and indirect requirements from all the sectors are very limited. This is reflected in the values of total requirement from all the sectors as shown in the Leontief Inverse Matrix. The data show that the value of backward and forward coefficients in the Leontief Inverse Matrix is very limited. Their value ranges between 0.029 and 0.028 respectively. Thus it can be concluded that tobacco control policies will have very little effect on the overall economy.

Concerning the impact of the tobacco industry on national employment, two measures were considered—the wage effect and the employment multiplier.

The total value of wages in the tobacco industry increased from EGP 97.428 thousand in 1991–1992 to EGP 151.934 thousand in 1997–1998. The increase in wages in that industry can be explained by the increase in sales, which reflects a sufficient demand for the final product. The demand affects production levels and employment levels inside the industry by increasing both. Also, an increase in productivity in this industry promotes an increase in wages.

According to the coefficient values the direct effect of satisfying one unit of final demand is 0.027 and this coefficient is less than the total effect, which includes the direct and indirect effect 0.035. Although there is a difference in the values of wage effects, their value is very low. This means that tobacco control policies will have a very minor effect on the economy through their effects on tobacco industry and the final demand.

The direct employment multiplier signifies the number of workers used to produce one unit with regard to all the backward and forward relations among all the sectors in the economy. In terms of the tobacco industry, the value of the direct employment multiplier equals 0.06. This means that the production of 100 units requires six workers. In addition, the value of that multiplier for the tobacco industry is less than or similar to all the sectors (i.e. production in the tobacco industry does not demand a large number of workers) along with mining and petroleum (0.003), wood and wood products (0.04), oil products (0.04), transport and communication (0.03), electricity (0.02), housing (0.03) and hotels (0.04).

Estimating the direct and indirect employment multiplier, the number of workers needed to produce one unit increases. But the increase in the number of the workers will be different among all the sectors, depending on production techniques. With respect to the tobacco industry, the increase in the number of workers is less than that for similar industries in the economy except for oil products and miscellaneous products. Meanwhile, there is a slight difference between the direct employment multiplier (0.06) and the direct and indirect employment multiplier in the tobacco industry (0.07). Hence, the study predicts that the effect of tobacco control policies on employment will not reflect a large difference between the direct effect on the tobacco industry and the indirect effect concerning the relation with all other economic sectors.

The study also assesses the expected consequences of tobacco control for economics: production and employment. It demonstrates that the economic fears that have deterred policy-makers from taking action are largely unfounded. Policies that reduce the demand for tobacco, such as a decision to increase tobacco taxes, would not cause long- term job losses. Such policies could bring health benefits without harming economics. Tobacco control policies can be divided between measures that reduce the demand for tobacco and those that reduce the supply of tobacco. This study did not depend on the measures to reduce supply since tobacco is entirely imported from abroad. Rather, the study depends on demand measures to control the demand for tobacco.

These measures include price measures and non-price measures. The former depend on raising taxes to increase cigarette prices while the latter involve comprehensive bans on advertising and information measures. Information measures comprise mass media counter-advertising, prominent health warning labels, publishing and disseminating research findings on the health consequences of smoking as well as restrictions on smoking at work and in

public places. Concerning the demand side, the study assessed the impact of demand measures on national employment in the Egyptian economy by using two simulations: increasing the price of cigarettes by 10% and enforcing non-price measures.

Assessing the impact of increasing cigarette prices on national employment depends on two assumptions. The first assumption is that the increase in the price of cigarettes will reduce their consumption though smokers will *not* increase their spending on other goods and services as a result of this reduction. The second is that smokers *will* increase their spending on other goods and services according to the reduction in their cigarette consumption. The results are reflected in the values of backward and forward coefficients in the Leontief Inverse Matrix.

The impacts of price and non-price measures on national employment are positive, but the non-price measures are more effective than the price measure because the rise in national employment will be higher and the reduction in domestic production will be lower.

General overview

Introduction

In addition to its damage to health, tobacco use causes considerable economic loss through rising health costs and loss of productivity. This is why there is an increasing need to analyse the causes, consequences and costs of tobacco use. This in turn will assist in developing taxation and regulatory measures to eliminate tobacco use (World Bank, Press Release No.98/1439).

Several measures may be undertaken whether on the demand or on the supply side. On the demand side there are several options. Increasing the price of cigarettes through taxation is one of the best-known, cost-effective ways to reduce demand. It has been shown that adolescents are more responsive to price rises than adults because of their relatively limited budget, their relatively higher environmental awareness and young age. Other interventions such as comprehensive advertising and promotion and sponsorship bans, smoke-free policies, treatment for tobacco dependence and strong package and labelling regulations have proven to be effective.[1]

On the supply side several measures may be adopted. Effective supply-side measures must include action against smuggling, prominent tax stamps and warnings against cigarettes' use. Due to the market competition among suppliers, measures to reduce the supply are less promising. Moreover, as long as the incentives to farmers to grow tobacco are currently much greater than for most other crops, this measure will not reduce consumption.

Policy-makers raise several concerns about tobacco control, such as permanent job losses, reduction in government revenues and massive increases in tobacco smuggling.

The concern in this paper is that tobacco controls will cause permanent job losses in the economy. A reduction in tobacco use can lead to a smaller tobacco industry, which in turn can affect, in both desirable and undesirable ways, the total number and distribution of the employed in a nation or a region. For this reason the employment aspect of tobacco control measures should be examined, when considering an effort to reduce tobacco use.

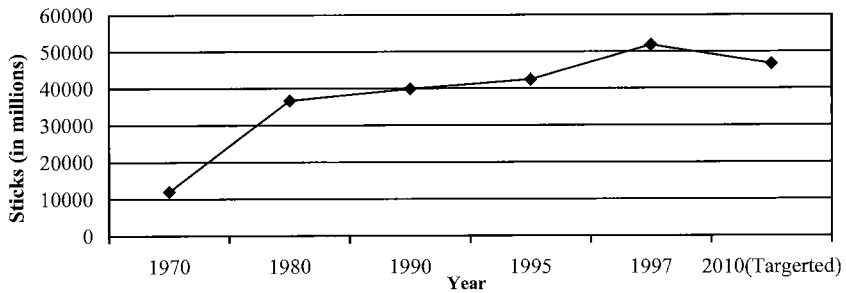
[1] (http://www.worldbank.org/tobacco/book/html/chapter4.htm)

Governments in developing countries fear that tobacco control measures will create unemployment, an undesirable factor in poverty-alleviation strategies. This might not happen if the money spent on cigarettes were instead spent on other goods and services, generating other jobs to replace any loss from the tobacco industry. However, for economies depending on tobacco farming a fall worldwide in demand would result in job losses because labour intensity is much higher in tobacco farming than in tobacco manufacturing (World Bank, 1999).

Smoking prevalence in Egypt

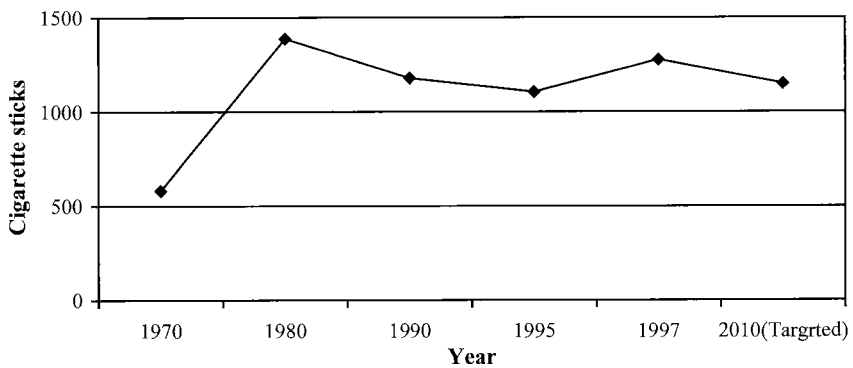
Total cigarette consumption in Egypt increased from 12 027 million sticks in 1970 to 51 814 million sticks in 1997 as indicated in Figure 1-1. The number of smokers has increased over twice as fast as the population over the last 30 years. In the meantime, Figure I-2 shows a decline in per capita consumption over the last half of the 1980s and the first half of the 1990s. It was reported that the price increase was the main factor behind this drop (Ministry of Health and Population, National Smoking Programme, 2001-1).

Figure I-1. Annual cigarette total consumption (Sticks in millions)



Source: Table (I-1) Appendix

Figure. I-2. Annual cigarette per capita consumption



Source: Table (I-2) Appendix

These changes can be explained by a number of factors. There were major, steady increases in cigarette prices with which consumers could not keep pace. A price hike in June

These changes can be explained by a number of factors. There were major, steady increases in cigarette prices with which consumers could not keep pace. A price hike in June 1989 and April 1990 both helped dent confidence in the market, while three increases in 1991 helped bring about a 7.7% drop in sales at a time when the economy itself was in decline.

Growth since 1992 can be explained by an improvement in quality, the cigarette price freeze and more attractive packaging for domestically manufactured cigarettes. More important has been the concept of price fixing that was brought into force in October 1991 when the Egyptian Government announced that cigarettes were a significant revenue-generating commodity. Apart from two unplanned price increases since that date, cigarettes have been maintained at prices that, in real terms, have been falling.

With the GDP increasing from 1.7% in 1993 to 4.6% in 1995 and inflation falling by 8.3% that same year, volume sales have steadily improved. They increased by 9.3% in 1995 and by a further 9.0% in 1996, bringing the cigarette market to 45.250 million sticks. A more dramatic increase of 10.5% followed in 1997 on the heels of a rise in average incomes of 15%, bringing sales volumes to 50 thousand million sticks.

Another important factor influencing the increase in tobacco consumption in Egypt is the greater consumption of foreign cigarettes fuelled by the open-door policy and liberalization of trade and production. The percentage of foreign cigarettes to national cigarette consumption increased from 4.8% in 1990 to 16.3% in 1999. The increase in consumption was remarkable for Philip Morris cigarettes in particular.

Tobacco economy

Economic analysis of tobacco product markets has brought considerable insight to debates about the industry's importance and appropriate public policy. The most significant concern is the impact of tobacco control policies on employment. This section addresses this issue by exploring the following related issues.

(A) Development of the Eastern Tobacco Company (ETC)

Egypt's tobacco industry is dominated by the Eastern Tobacco Company (ETC), a joint stock company established in 1920 and nationalized by the Government in 1956. The largest cigarette manufacturer in the Eastern Mediterranean Region, the ETC has a monopoly on domestic production, controlling about 92% of the Egyptian market (Omar, 1988). The company operates seven cigarette factories, selling 45 thousand million cigarettes domestically and exporting 1 thousand million in 1996. Domestic cigarette brands comprise over 90% of ETC's production, with the company's Cleopatra brand accounting for an estimated 80% of total production. Other domestic brands include Boston and Corona. The ETC also produces international brands, such as Marlboro, Merit, Silk Cut, Camel, Kansas, Winston and Kent, under licensing agreements with Philip Morris, British American Tobacco (BAT), JT International and Gallaher. Under these agreements, the companies provide the ETC with the raw materials and are charged a fee of US$ 5.00 per 1 000 cigarettes. A total of 21 international brands are made in the ETC's factories, bringing in some US$ 21 million a year in fees. The ETC has been the only manufacturer of cigarettes since it merged with the El-Nasr Tobacco Company in 1984. Both the public and private sectors, however, import and manufacture tobacco. About two-thirds of total tobacco consumption in Egypt is used to manufacture cigarettes. The remaining one-third is used for "moassil," or water-pipe tobacco production. Private sector processors produce all the water-pipe tobacco in Egypt.

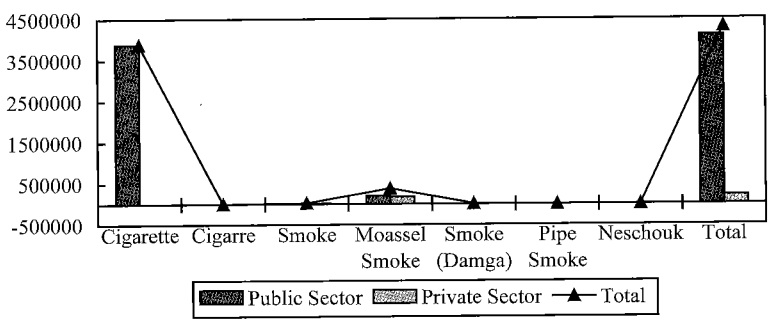
In general, there are 29 tobacco companies in Egypt. The production of most domestic brand cigarettes is based on blends consisting of about 50% flue-cured tobacco, 25% burley tobacco, and 25% oriental tobacco. Flue-cured tobacco is the major type of tobacco utilized by the ETC. The company is a highly price-conscious buyer and hence will, to the extent possible, substitute lower-cost burley and flue-cured tobaccos from other sources for U.S. tobacco. This State-run cigarette company has long dominated the market, but is beginning to lose ground to Philip Morris. During the mid-1990s, the Government began privatizing the ETC, although the president has emphasized that the company will not be fully privatized, since Egyptian law currently forbids majority ownership of certain firms by the private sector. The private sector also produces small amounts of moulassed and fine-cut tobacco. Factories produce local brands and also manufacture foreign brands.

The Government has recently invested in new packaging equipment and is purchasing higher-quality leaf. The ETC has introduced a number of new brands, including a 10-cigarette package priced at about $US 0.25, which is reportedly very popular. ETC profits for the fiscal year 1999 rose to over $US 66 million, primarily as a result of these innovations. Currently, only about one-third of ETC's manufacturing capacity is needed to meet domestic needs.

Domestic cigarette brands comprise over 95% of the ETC's production. The remaining 5% consists of foreign brands (mainly Philip Morris and JT International) manufactured by the ETC under agreements with the parent companies. In 1999, the company utilized 200 metric tonnes of U.S. flue-cured from its old stock for the production of its local cigarette brands.

The majority of water-pipe tobacco is a blend of dark fire or air cured tobaccos (about 20%) with other tobacco, mainly burley, and molasses. The production of fragrant water-pipe tobacco (apple, mint and citrus flavours) has been rising in the last few years[2].

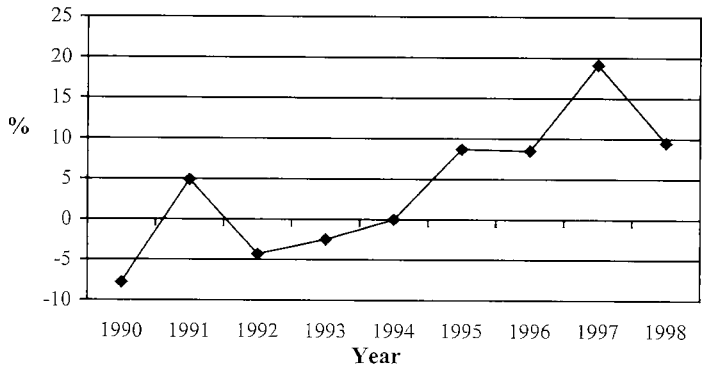
Figure I-3. Production of tobacco by type 1997/1998



The percent of annual change of cigarette production shows an increase in production in recent years as indicated in Figures number I-4.

[2] http://www.easternegypt.comsharkya.nsfmarketing

Figure I-4. Annual change in cigarettes production-1990–1998 (%)



With the increase in consumption a significant rise in cigarettes sales occurred especially in the late 1990s, for Cleopatra cigarettes, in particular. This growth trend in the ETC sales can be explained by the improved quality of products brought about by upgrading factories with new and renovated machines, in addition to supporting quality control and opening new distribution outlets (ETC, 2001).

(B) The economic importance of the tobacco industry

Tobacco's key role in Egypt's economy is illustrated by the following:

- Treasury revenues from the tobacco and the cigarette industry have increased from EGP 2382.7 million in 1993—1994 to EGP 3445.6 million in 1998–1999, excluding 1996–1997 and 1997–1998.
- The profits of the ETC, the only State enterprise, took a significant leap. The ETC's net profits were EGP 243.2 million in 1998–1999 with an increase of EGP 81.7 million over the 1997–1998 period or a 51.5% increase. These profits affected the volume of traded ETC shares and market capitalization in the following way:
    - Market capitalization of traded ETC shares increased from EGP 230 million in 1997–1998 to EGP 519 million in 1998–1999.
    - ETC was selected among 66 Egyptian companies by the IMF international finance organization of the international bank for securities index to be included in its index of investment.
    - ETC stock has become one of the ten largest stocks on the Egyptian Stock Exchange.

ETC's net profits over the last seven years (from 1992–1993 to 1998–1999) increased steadily through implementing cost-effective measures and continuously developing the product mix. ETC's net profit in 1998–1999 was EGP 243.2 million, with an increase of EGP 83.2 million over the budget, and EGP 81.7 million increase over 1997–1998 profits or a 51.5% increase. The average revenues contributed by the company to the State treasury as taxes and levies are over EGP 9.5 million per day (Ministry of Economy, 2001).

(C) Tobacco trade

Despite the fact that Egypt does not grow its own tobacco, in recent years it has increased its cigarette exports to neighbouring countries.

- Egypt exports cigarettes to other Arab countries (Gulf countries, Saudi Arabia and Yemen) mainly for consumption by Egyptian expatriate workers.
- Cigarette exports jumped 530% between 1985 and 1994, from 200 million to 1.26 thousand million sticks. According to United States Embassy sources, most go to Gulf countries, Saudi Arabia and Yemen. In addition, ETC exports comprised about 1 300 metric tonnes of water-pipe tobacco to these countries.

Smaller role for imports in the Egyptian cigarette market

Imports play a much smaller role than they did during the early 1980s. Before they were banned to preserve foreign exchange and protect the country's State-manufacturer ETC, imports stood in 1986 at 1 905 million sticks. When the ban was lifted at the beginning of this decade, allowing imports once again into the domestic market, it appeared that it did not result in a similar level of penetration, with high levels of import duty and established licensed production acting as a barrier.

Volumes stood at 90 million sticks in 1990 and have risen steadily since that year. In 1994, 243 million cigarettes were imported. In 1993, import costs of tobacco products amounted to US$ 143.8 million (0.9% of total imports), up from US$ 102 million in 1990.

Tobacco imports increased by 162% between 1996 and 1998, to reach over 55 000 metric tonnes. Egypt imports a large amount of inexpensive tobacco from China and India. Brazil, Italy, the Syrian Arab Republic and the United States have also been important sources of leaf (Ministry of Economy, 2002).

Tobacco control in Egypt

Tobacco control measures in Egypt started with the 1981 legislation requirements to print health warnings on packets, establish maximum tar and nicotine yields and partially restrict advertising and sponsorship. A complete ban on radio and TV advertising has been in effect since 1977. With advertising, a statutory warning must be displayed and currently advertising is prohibited. However, advertising was permitted on billboards, in the press and at the point of purchase. Cigarette companies, especially Philip Morris, have launched very aggressive marketing and distribution campaigns to build brand recognition and increase market share. Because companies cannot control cigarette prices because they are Government controlled, marketing is their main tool for attracting new smokers.

Ample tobacco control legislation but no enforcement

To protect non-smokers, in 1981 legislation was passed banning smoking in enclosed public places and on public transport such as trams and buses. Smoking is also not permitted on domestic air flights and in cinemas and theatres. Non-smoking compartments have been provided on trains. Recently, the Government extended the ban to all public transportation, but it is not well enforced (Ministry of Health and Population, 2000). Smoking is also restricted in healthcare institutions.

The laws and regulations issued for tobacco control in Egypt are:

- Law No.52/1981, aiming to prevent smoking and to reduce tar percentage to 20 milligrams per cigarette. It also forbids smoking in public places and on public transportation.
- Law No.1371981 imposing penalties on smokers in work places.
- Law No.41994 preventing smoking in enclosed public places and imposing penalties (10 EGP) on those who smoke on public transportation.
- A Smoking Control Department was established on 4 August 1997 to coordinate among all ministries, agencies and Ministry of Health and Population (MOHP) departments in all activities related to smoking control.
- A Ministerial decree No.3441997 was issued to assemble a Steering Committee for the National Programme for Smoking Control. The committee included representatives from the Ministers of Health, Information, Education, Social Labour, Awqaf, Tourism, Interior Affairs, and Environmental Affairs, in addition to the High Assembly of Youth and Sports, and nongovernmental organizations (NGOs) working in the same field.

Ministerial decree No.289/1997 was issued to:

- limit the quantity of tar to a maximum of 15 milligrams per cigarette;
- sample cigarettes periodically to ensure that they conform to standard Egyptian specifications.
- establish three laboratories in Cairo, Alexandria and Port Said for analysing different kinds of tobacco to conform to standard Egyptian specifications.

Other important tobacco control initiatives included the following:

- In February 1998, the United States State Department issued a cable prohibiting United States embassies from promoting sales or exports of tobacco products and called on embassies to support local anti-smoking laws, etc.
- In June 1998, the Health Committee of the People's Assembly proposed a ban on all tobacco advertising, prohibiting the sale of cigarettes to those under 18 years of age, and increased the price cigarettes.
- In November 1998, His Excellency, Dr Ismail Sallam chaired a meeting of the Arab Health Ministries Council, which discussed a working paper on inter-Arab cooperation on combating smoking in the Arab world.
- In December 1998, the First Inter-regional Focal Point Meeting for the Tobacco Free Initiative was held in Alexandria, Egypt.
- Tobacco control and prevention is also identified as a priority area in Healthy Egyptians 2010 Initiative. Healthy Egyptians is an initiative at the national and governorate level (Ministry of Heath, 2000).

Health education has become a significant tool

Health education programmes have started in schools, universities and among women's organizations. The Government also sponsors an anti-smoking educational campaign, including radio broadcasts, which have played at schools warning students of the dangers of smoking. Recently, the First Lady of Egypt has started a major campaign to stop smoking at the national level particularly orientated toward youth.

The national campaign to prohibit sale of tobacco to young adults and children was carried out during February 1999 and was aimed at mobilizing the community to reject sale of smoking to children and convince tobacco merchants not to sell the product to these groups. The activities of this campaign varied from seminars, TV messages and programmes to radio announcements, meetings and discussions as well as posters, booklets and brochures. This plan, to be implemented in collaboration with several ministries and agencies, includes:

- prohibiting cigarette advertising;
- introducing into the curriculum of preparatory schools warnings on the health hazards of smoking to increase the awareness of students;
- producing and broadcasting three TV spots about smoking as a risk factor for many diseases; and
- producing thousands of posters, stickers, booklets and pamphlets to increase public awareness on the hazards of smoking.

Community participation was encouraged through several workshops and, seminars. Smoking control had been conducted in Egypt through Medical Syndicates. Two NGOs conducted several activities to help smokers quit.

Moreover, there is an initiative for achieving healthy Egyptians by 2010 and reducing the diseases and mortality from smoking which entails:

- reduce smoking-attributable mortality so that it does not exceed 86 715 deaths per 100 000 men and 658.8 for 100 000 women (35 years and above) (Ministry of Health, 2000);
- reduce smoking prevalence to a maximum of 10% of the population from the current 21% in 1998 (MOMP survey, 1998); and
- reduce Shi-sha "waterpipe" smoking prevalence, which is still unrecorded, however, there is an alarming rise in the number of such cafes, which specifically attract young people (Ministry of Education, 2001).

Tobacco industry vs. national employment

Overview of the Egyptian economy

The Egyptian Government undertook major economic structural adjustment policies (ERSAP) to reduce the budget and the balance of payment deficit and to enhance economic growth. These measures were strengthened in 1990. The experience under the economic stabilization programme indicates a reduction of the budget deficit, from 5.5% of GDP in 1991–1992 to 3.1% in 1999–2000. The inflation rate declined from 9.1% in 1993–1994 to 2.8% in 1999–2000. Budgetary expenditures were reduced to 3.8%. Much of the weight of expenditure reduction fell on Government investment, which dropped from 11.3% to 5.6% of GDP. The private sector was encouraged to invest in areas such as infrastructure from which it had been excluded. The overall investment was 19.8% in 1999–2000. It also corrected important distortions in the economy (such as negative real interest rates) and built up a sizeable cushion of foreign exchange (Nassar, 2000).

Egypt's economic growth performance at the end of the 1990s and the beginning of 2000 was unstable. The stabilization efforts of the early 1990s resulted in lower growth, averaging 3.8% from 1990–1995, however it increased to 5.5% from 1996–2000. Macroeconomic policy provided a stable environment for private-sector activity.

Investment, both public and private, explains to a large extent the GDP growth performance in the post-stabilization period. Gross Domestic Investment (GDI) increased to 19.8% of GDP by 2000, up from 16.6% in 1999–2000.

However since the beginning of 2000 concerns have emerged about the sustainability of Egypt's economic performance, in particular regarding the competitiveness of the Egyptian economy and its domestic productivity and growth.

- The accelerated rate of growth of GDP per capita masks an unemployment rate that is kept at 7.4% in official estimates but other surveys in 1998 place at 11.8%; a shortage in productive employment opportunities; a trade balance deficit amounting to -11.7% of GDP and in the balance of payment (-3.9% in 1999–2000) as well as a budget deficit amounting at 3.1% of GDP in 1999–2000 (Table I-1) (Nassar, 2001).
- Manufacturing growth (10% over the period 1998–2000) is concentrated in satisfying local demand in relatively low technology sectors such as textiles. The fastest growing sectors have been primarily non-tradable for the domestic demand. The main growth sectors, services and construction, while creating new employment, are also not contributing to improving productivity and the economy's competitiveness.
- The services sector has been the largest contributor to GDP growth. Tourism explains a significant part of the sector's expansion. Much of this growth was linked to domestic demand rather than foreign demand, which showed several fluctuations.

Despite the important role of foreign direct investment (FDI), with its spillover effects on productivity, technology transfer and market entry, FDI plays a more modest role in Egypt. Egypt is also not a major recipient of foreign direct investment (FDI). From 1996–2000, it averaged some US$ 1 thousand million annually (roughly 1% and 5% of GDP and GDI, respectively). More than half of the FDI flows into Egypt during the past decade have been in three sub-sectors: chemicals, food and beverage, and engineering. With tourism they represent 70% of the total. FDI in Egypt was estimated at US$ 598 million in 1996, 3.5 times that of 1991, but about half the level attained in 1994. FDI as a percentage of GDP in Egypt remains well below the level in the rapid growing economies of Asia and Latin America.

The employment situation in Egypt

Currently, Egypt's economy has not adequately absorbed graduate students and has under-utilized unskilled human resources. Additional problems comprise overstaffing in the public sector, coupled with shortages in skills, and low employee productivity (IMF, 1995).

Unemployment is estimated at 8% in official statistics and 12% in special labour market surveys (Nassar, 1999; Assad, 1999). Almost 60% of the unemployed in Egypt are new entrants to the labour force. Unemployed males without previous work experience are almost entirely under age 30. The profile of those currently unemployed differs significantly from that of the workers who are likely to be displaced by economic reforms and will be public employees. As part of a structural adjustment programme, the Egyptian Government has established very ambitious targets for privatization. It is widely believed that privatization offers the opportunity to increase the efficiency of previously State-owned enterprises. However, privatization raises the problem of excess labour in public enterprises. Workers in these establishments may be at the greatest risk of job displacement, as labour redundancy within State-owned enterprises is viewed as one of the most serious challenges facing the privatization programme.

Privatization often involves the offer of early retirement schemes, which will lead to an increase in the number of unemployed. However opportunities do exist for retraining, redeployment, or for becoming self-employed, which might lead to increasing numbers of job seekers in the labour market. These workers will be older than the new entrants to the work force and have more financial responsibilities towards their dependants. In addition underemployment in Government entities has been considered as an important feature of public institutions requiring a major administrative reform programme.

Tobacco industry employment

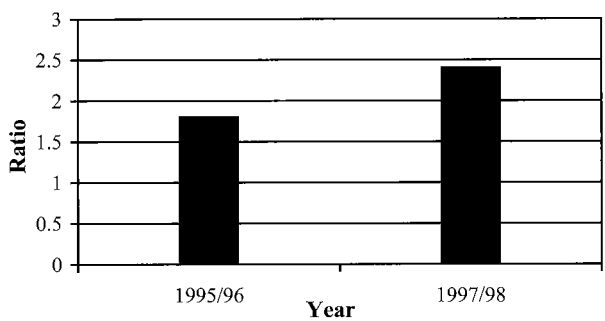
Direct tobacco employment is defined as a job directly related to the production, distribution and retailing of tobacco products. Based on the physical flow of the tobacco product, direct tobacco employment falls into four groups:

- tobacco farming;
- leaf marketing and processing;
- cigarette manufacturing; and
- cigarette wholesaling and retailing.

Coincidentally, this classification is consistent with the organization of the tobacco industry in most countries. In Egypt, tobacco farming and leaf marketing and processing are not yet distinct economic activities, thus no one is employed in these activities. So the study counts employment related to cigarette manufacturing and its wholesaling and retailing.

The Egyptian tobacco industry is a public enterprise. Table (II-1 Appendix and Figure II-1) shows that the percentage of workers in this company related to labour force employed by the industrial public sector increased from 1.8% in 1995–1996 to 2.4% in 1997–1998. This is mostly due to a decline in total employment in the industrial public sector, and only to a very small extent because of the increase in employment in the tobacco industry.

Figure II-1. Ratio of employment in tobacco industry to employment in industrial public sector

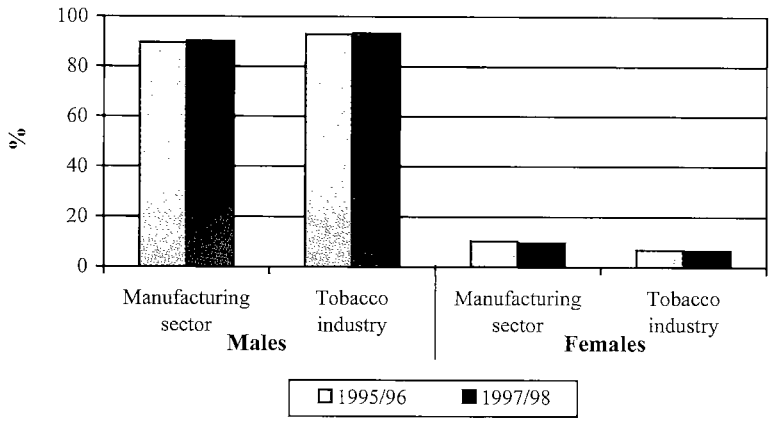


Source: Table (II-1) Appendix

Table (II-2 in Appendix and Figure II.2) indicates the gender pattern of employment in manufacturing sector and tobacco industry. The percentage of female employment to total employment in manufacturing sector and tobacco industry decreased from 10.4%, and 6.9% in 1995–1996 to 9.7% and 6.6% in 1997–1998 respectively.

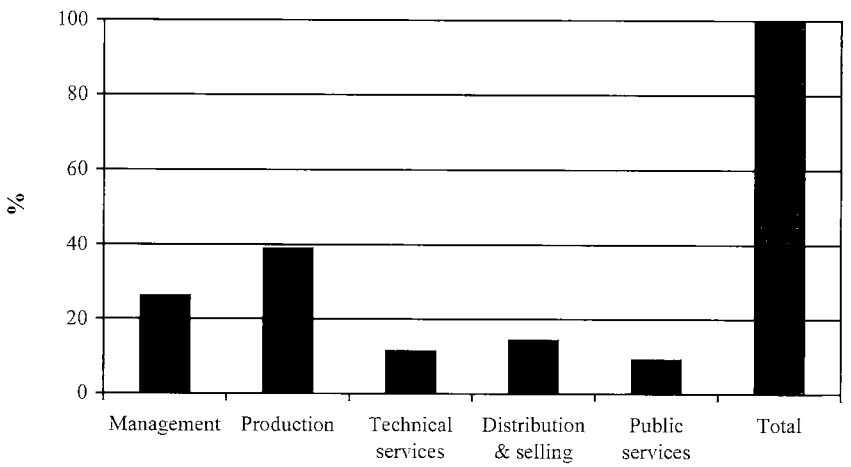
Table (II-3 in Appendix and Figure II-3) shows the distribution of labour force engaged in the tobacco industry in 1997–1998 according to function: production (38.9%), management (26.1%) distribution and selling (14.3%), technical services (11.4%) and public services (9.1%).

Figure II-2. Gender employment in manufacturing sector and tobacco industry



Source: Table (II-2) Appendix

Figure II-3. Distribution of employment in tobacco industry per function (%)



Source: Table (II-3) Appendix

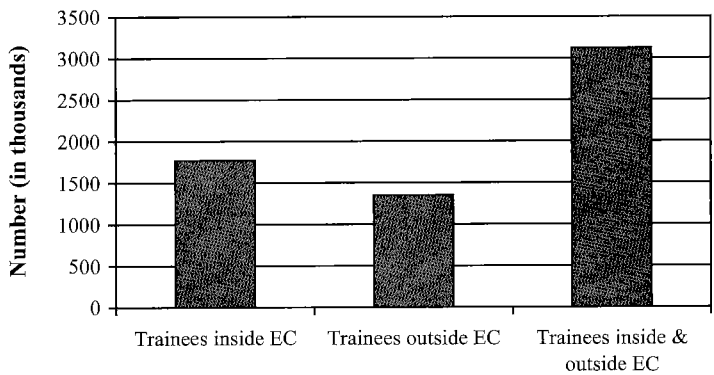
Development of ETC's strategy to promote labour productivity:

Labour productivity is positively affected by two factors: capital investment and developing labour skills. Capital investment increases when the ETC improves its product quality by supplying factories with new and renovated machines, in addition to supporting quality control.

Developing labour skills is the central pillar in ETC's strategy for the millennium with all the threats and competition of the new world economic order. The ETC developed human resources skills in the following ways:

(1) ETC lays great emphasis on developing its human resources skills through administrative and technical training. The training plan for the year 98/99 was successfully implemented as shown in Table (II-4 Appendix) and Fig.II-4.

Figure II-4. Number of trainees in training plan in Eastern Company (EC) (in thousands)



Source: Table (II-4) Appendix

(2) social services and facilities offered to ETC staff.

The value of the employee welfare services amounted to EGP 32.028 million in 1998–1999, in comparison to EGP 28.359 million in 1997–1998, with an increase of EGP 3.669 million representing a 13% increase as follows:

- labour meal costs was EGP 7.131 million, compared to EGP 5.862 million in 1997–1998, with EGP 1.26 million increase, representing a 22% increase.
- labour medical care costs totalled EGP 13.917 million, compared to EGP 12,654 million in 1997–1998, representing a 10% increase.
- labour social activities costs reached EGP 7.225 million, compared to EGP 5.984 million in 1997–1998, representing a 21% increase.

(3) dissemination of information to all workers.

ETC issues a seasonal magazine called Cleopatra that publishes ETC labour views and keeps them apprised of the company's future strategies in terms of production, marketing, social services, productive expansions of factories and export policy. Furthermore, the

magazine represents an incentive to all labour to participate in the company success story by being fully aware of all related concerns either domestically or internationally.

The above measures contributed to labour productivity[3] increasing from EGP 109 on 30 June 1995 to EGP 163 in 30 June 1999 and to EGP 172 in 30 June 2000.

Tobacco control policies and industry employment

Input-Output (I-O) analysis provides an estimation of sectors economic impact by taking into account the indirect effects on all the other sectors. The I-O analysis has some distinct advantages. First the I-O analysis captures the forward and backward inter-relationships of any productive sector with the other sectors of the economy. Second, it provides a consistent and systematic approach for understanding the economic impact of changes in any productive sector on the other sectors of the economy. Third, it allows analysis of the impact of growth in one or several sectors on the requirements of inputs, including labour and capital (Pohit, 2000).

The I-O accounts, with some very strong assumptions, form the basis of an economy-wide general equilibrium model that focuses on production. The essential assumptions are that: (a) each sector "activity" produce only one output; and (b) inputs are required in fixed proportions to output in each sector, meaning that technical coefficients are fixed. (c) there are constant returns to scale in production. (d) it is assumed that there are no constraints on resources. Supply is infinite and perfectly elastic. All local resources are efficiently employed (Dervis et al., 1982; Fatemi, 2000).

Input-Output model

A simple I-O model considers that the output demanded in the economy consists of two parts: the endogenous or intermediate demand and the exogenous or final demanded. These inter-industry linkages of the I-O flow table enable an analyst to estimate how various types of exogenous disturbances originating in specific sectors will be transmitted throughout the economy (Pohit, 2000; van der Limden, 1998; Dervis et al., 1982).

Following the typical mathematical representation, the I-O transactions table can be denoted as[4]:

$$X_i = \sum^{m}_{j=1} X_{ij} + \sum^{p}_{k=1} Y_{ik}$$

$i = 1 \ldots\ldots m$

X_i = the total output of sector (i)
(endogenous)

X_{ij}= the amount of output produced by sector i and purchased by sector j for production purposes (endogenous)

Y_{ik}= the amount of output produced by sector (i) for final demand of type k (exogenous).

---

[3] Productivity is defined as the value added / number of workers.

[4] It is important to place the mathematical representation of I-O Table in context to enable the read to understand the meaning of Technical Coefficients.

m= the number of sectors

P= the number of final demand sectors (which include household consumption, Government expenditure, etc).

It is assumed that the relationship between inputs and outputs can be specified by fixed I-O coefficients.

$a_{ij} = X_{ij} \; X_j$

$X_{ij} = a_{ij} \; xj \qquad (i, j = 1 \ldots m)$

A_{ij} signifies the amount of input of commodity i that is required to produce one unit of commodity j.

Substituting aij in the original equations gives the new set of m equations as follows:

$\sum a_{ij} X_j + \sum^{p}_{k=1} Y_{ik} = X_i \qquad (i=1 \ldots . m)$

In matrix notation, this is represented as:

$AX+Y=X$

Where A is a (m x m) matrix of (a_{ij}) coefficients, x is a (m x 1) vector of level of final demand for each of the m sector. The matrix A is commonly known as I-O Technical Coefficients Matrix by definition, a_{ij} entry in this matrix signifies the amount of input of commodity i that is required to produce one unit of commodity j.

The solution to this system is obtained of follows:

$X - A X = Y$

$(I - A) X = Y$ where I is the (m x m) Identity matrix

$X = (I - A)^{-1} Y = RY$

Where $R=(r_{ij})$ is a (m x m) matrix

The matrix R is known as the Leontief Inverse. Each coefficient rij represents the amount of output of sector j required to meet the requirement of one unit of final demand for sector j. It includes direct and indirect effects in the sense that to produce one unit of sector i's output we need a_{ij} units of output of sector i's output. Thus r_{ij} capture the direct and indirect effects (Pohit, 2000).

A convenient way of looking at the response of the economy to changes in final demand of the various sectors is to introduce multiplier. The Leontief Inverse itself does not take into account the primary factor requirements of the production process. But it is easy to extend the I-O model to include an analysis of primary factor requirements. Assume that L units of labour are required per unit of domestic production vector x has been derived from an exogenous projection of final demand. The total employment requirement can be computed as follow:

$$LX = L (I - A)^{-1} Y$$

Where L is the row vector of labour coefficients gives that total demand for labour derived from final demand (Dervis et al., 1982; Razenov, 1998).

Direct requirement from other sectors to tobacco industry

Table ((III-1) Appendix) shows a 24-sector input–output table[5] that provides a summary of the circular flow of production in the Egyptian economy. This table can be defined as the inter-industry transaction matrix or I-O Tables. The columns of the transaction matrix show the composition of input required by a particular industry to produce its output. The rows of the transaction matrix display the distribution of a particular industry's output throughout the economy.

The direct requirement indicates the need from each industry for a particular industry to produce one unit of production. This coefficient can be defined a technical coefficient, which is used to show the backward and foreword relation between the studied sector and other sectors,

In the Egyptian economy, there are two sources of I-O Tables. The first is CAPMAS and the second is the Ministry of Planning. In fact, the study must depend on CAPMAS tables, because it reflects the real relation among all the sectors in all the economy. The Ministry of Planning's table, however, is built on the estimated relation among the sectors according to the economic plans. The last I-O table issued by CAPMAS was in 1991–1992 but the Ministry of Planning's issued table was from in 1996–1997. Hence, the study will try to apply the two tables to determine the difference in their results, applying various scenarios.

Concerning the tobacco industry, Table (III-2 Appendix) indicates that its foreword direct coefficient equals 0.077, but its backward direct coefficient equals 0.104. This means that this sector depends more on the other sectors and plays a relatively small role in providing materials to these other sectors. This has to do with the type of production involved in the tobacco industry in that it produces a product ready for final consumption. The single sector that receives its product is the restaurants/hotel sector. However the coefficient of tobacco industry to restaurants and hotels is small (0.007).

Concerning the backward relation between the tobacco industry and other sectors, Table (III-3) shows that all the values of backward coefficients are small. They range between 0.0001 for rubber and plastic products and 0.008 for food industries, except for the finance, trade and insurance sectors, for which the coefficient equals 0.01. This can be explained by the high dependence of the tobacco industry on imports to get the inputs for the production. The percentage of imported inputs to total inputs was 67.7% in 1991–1992.

Moreover the study examined the role of tobacco industry and its relationship with the other sectors in the economy using the I-O Tables 1996–1997. Table (III-4) indicates the value of direct backward and forward coefficient of tobacco industry. The comparison of Tables (III-2) & (III-4) indicates a difference between the values for direct forward

[5] The difference between the number of workers in the tobacco industry and the number used in the I-O Table is not an error. This can be explained by the difference in the sources of data when obtaining all the sectors in the Egyptian economy, but still the ratio of employment in the tobacco industry to employment in the manufacturing sector is the same despite the difference in the data source.

coefficient. This can be explained by the expansion in foreign markets compared to the local market. Exports peaked at 1.300 million sticks in 1997, compared with 750 million in 1990.[6]

In spite of the difference between the values of direct backward and forward co-efficient of the tobacco industry in I-O Table 1991–1992 and I-O Table 1996–1997, the small value of coefficients give the same result. It means that the tobacco industry has a minor effect on the Egyptian economy.

Total requirement from the other sectors to tobacco industry

To supply the tobacco industry with the required inputs, the other related sectors increase their output and this cycle will continue to affect the economy's output. The total requirement matrix for the entire economy is called Leontief Inverse, which contains both the direct and indirect requirements.

Concerning the outward dependency of the tobacco industry, its direct and indirect requirement from all the sectors is very small. This is reflected in the values of total requirement from all the sectors as shown in Leontief Inverse Matrix (Table III-5 Appendix). Table (III-6) indicates two results: firstly, the value of backward and forward coefficients in Leontief Inverse Matrix are very small, their values are 0.04 and 0.05 respectively. Second, the tobacco control policies concerning the supply or demand side will have little effect on the overall economy.

The impact of the tobacco industry on national employment

This impact can be measured by using two methods: a wage effect and employment multiplier.

The previous methods reflect the effect of the tobacco industry on employment in terms of the cost of labour (wage effect) or how this industry affects the total number of workers inside the economy (employment multiplier).

A. Wage effect

The total value of wages in the tobacco industry increased from EGP 97 428 000 in 1991–1992 to EGP 151 934 000 in 1997–1998. So the nominal rate of increase reaches 55%. In addition, the real value of wages in the tobacco industry increased from EGP 41 388 000 in 1991–1992 to EGP 135 413 000 in 1997–1998 (the deflator equal to 112.2). The real rate of increase reaches 21.8%. In addition, the wage share of the tobacco industry in the value of wages in the manufacturing sector increased from 2.7% in 1991–1992 to 2.9 % in 1997–1998 as indicated in Table (III-7).

The increase in wages in this industry can be explained by the rise in sales, which reflects a sufficient demand for the final product. The demand affects the level of production and the size of employment inside the industry by increasing their levels. Also, the increase in productivity in this industry promotes the rise in wages.

Concerning wage effect, Table (III-8) indicates direct and total effect (direct and indirect) of the tobacco production to satisfy one unit of final demand.

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[6] Appendix (1) includes all the factors explain the increase in cigarettes exports.

According to the values of the coefficients in Table (III-8), the direct effect of satisfying one unit of final demand is 0.027 and this coefficient is less than the total effect, which includes direct and indirect effect 0.035. Although there is a difference in the values of the wage effects, their value is very small. Hence, the policies that can affect production in the tobacco industry, as well as the final demand and its effect on the overall economy will only have a very minor impact.

B. Employment multiplier

It is possible to estimate the relationship between the value of the output of a sector and employment of that sector. This is defined as a direct employment multiplier, which means the number of workers used to produce one unit. By using the Leontief Inverse Matrix, the direct and indirect employment multiplier can be measured. It determines the number of workers used to produce one unit with regards to all the backward and forward relations among all the economic sectors.

Table (III-9) indicates the direct employment multiplier for all the sectors in the Egyptian economy. Concerning the tobacco industry, the value of the direct employment multiplier equals 0.06. This means that the production of 100 units requires 6 workers. In addition, the value of that multiplier for the tobacco industry is less than any other multiplier for all the sectors, except for mining and petroleum (0.003), wood and wood products (0.04), oil products (0.04), transport and communication (0.03), electricity (0.02), housing (0.03) and hotels (0.03).

When the direct and indirect employment multiplier is estimated, as indicated from Table (III-10), the number of workers needed to produce one unit increases. But the increase in the number of the workers will be different among all the sectors and this depends on production techniques.

It was found that the tobacco industry required fewer workers to produce one unit. This result is similar for oil products and miscellaneous products. Such industries are described as capital-intensive, which means that they need fewer workers to produce one unit.

In addition, there is a slight difference between the direct employment multiplier (0.06) and the direct and indirect employment multiplier in the tobacco industry (0.07). Hence, the study predicts that the effect of tobacco control policies on employment will not reflect a large difference between the direct effect on the tobacco industry and the indirect effect concerning the relation with all the economic sectors.

By applying the Employment Multiplier in I-O Table 1996–1997 for the tobacco industry, the result will be different. The value of the multiplier is 0.01 (as indicated in Table (III-11). This means that the number of workers needed to produce one unit and satisfy one unit of final demand will be less than its similar number by using I-O Table 1991–1992. This can be explained by the increase in labour productivity from 109 in 30 June 1995 to 174 on 30 June 2000.

Implications of tobacco control policies on national employment

This study assessed the expected consequences of tobacco control on the economy, production and employment. It demonstrated that the economic fears that have deterred policy-makers from taking action are largely unfounded. Policies that reduce the demand for

tobacco, such as a decision to increase tobacco taxes, would not cause long-term job losses. Such policies could bring health benefits without harming the economy.

Tobacco control policies can be divided into:

- measures to reduce the demand for tobacco and
- measures to reduce the supply of tobacco.

It is important to begin by saying that while interventions to reduce demand for tobacco are likely to succeed, measures to reduce its supply are less promising.

This is because, if one supplier is shut down, an alternative supplier gains an incentive to enter the market. Similarly, the international evidence to date suggests that trade restrictions are such that import bans will have little impact on cigarette consumption worldwide. In addition, every country uses agricultural policies to affect the supply of tobacco, which is needed for the production of cigarettes. Hence, the study will not depend on the measures to reduce supply since tobacco is entirely imported from abroad.

A. Measures to reduce the demand for tobacco

These measures include price measures and non-price measures. The former depend on raising taxes to increase cigarette prices but the latter include comprehensive bans on advertising, information measures, such as mass media counter-advertising, prominent health warning labels, the publication and dissemination of research findings on the health consequences of smoking as well as restrictions on smoking at work and in public places. Concerning the demand side, we will assess the impact of the demand measures on national employment in the Egyptian economy by using two simulations. The first involves increasing the price of cigarettes by 10% and the second enforcing the non-price measures.

(1) Increasing the price of cigarettes

Evidence from countries of all income levels shows that price increases on cigarettes are highly effective in reducing demand. Higher taxes induce some smokers to quit and prevent other individuals from starting to smoke. Children and adolescents are more responsive to price rises than older adults, so this intervention would have a significant impact on them. This simulation will depend on two assumptions. The first is that the increase in the price of cigarettes will reduce their consumption though the smokers will *not* increase their spending on other goods and services as a result of this reduction. Instead, an increase in savings will be experienced. The second is that the smokers *will* increase their spending on other goods and services as a result of their reduced consumption of cigarettes. In terms of the Egyptian economy, we will assess the impact of increasing prices of cigarettes on national employment by using these two assumptions.

(a) Implications of the first assumption

The results of the Nassar study (2001) show that the increase in the price of cigarettes would lead to reduced cigarette consumption, its elasticity being - 0.397. Hence, households would decrease their consumption by 0.397. To determine its impact on national employment the analysis will rely on the I-O Tables. Table (III-12) indicates that an increase in the price of cigarettes would decrease their consumption. Based on the first assumption, the final demand in the Egyptian economy would decrease, so the production of cigarettes

would decrease by EGP 1552.27 according to the reduction of its demand. In addition, the domestic production will decrease by EGP 6169.3 as the final demand decreases. By studying the effect on national employment, Table (III-13) indicates that employment in the cigarette industry would decrease by 14.2607 thousand workers.

The most interesting result is the increase by 5961.875 thousand workers in the national employment. This is the result of increased savings. The resources for investment would increase and spur new investment, which would increase the need for new workers. This can be explained by using the values of the change in domestic production by economic activity as indicated in Table (III-10).

The sectors that achieve high value from the reduction in their product are the capital-intensive activities, such as oil products, basic metals and mining and petroleum. But the increase in employment was achieved in the service sector, which is described as labour-intensive. Hence, the increase in employment in the service sector fuels an increase in national employment.

(b) Implications of the second assumption

On the basis of the second assumption smokers would increase their expenditure on the other goods and services according to their reduced expenditure on cigarettes. Table (III-14) indicates that the domestic production would decrease by EGP 3985.98 million. This can be explained by the equalization between the value of the reduction in cigarette consumption and the value of the increase in the expenditure on other goods and services, so the total final demand held constant. Production in the cigarette industry would decrease by EGP 1518.3 million. By comparing Tables (III-13) and (III-15) one observes that the decrease in domestic production would be less marked if smokers increase their expenditure on other goods and services.

Table (III-15) indicates that employment in the cigarette industry would decrease by 13.76 thousand workers, while national employment increased by 6108.51 thousand workers. In comparing Tables (III-13) and (III-15), one obtains an important result—that increasing the expenditure of smokers on other goods and services will lead to an increase in national employment higher than the increase based on *not* spending on other goods and services.

(2) The second simulation: enforcement of the non-price measures

While Egypt started applying non-price measures in 1977, all its tobacco control laws and regulations have never been enforced. So the effect of enforcing non-price measures on the cigarette industry and national employment was examined. Using educational level as a proxy to non-price measures[7] and the result of the Nassar study (2001) indicates that there is a negative correlation between the educational level and expenditure on cigarettes. The value of the elasticity is -0.0359. Hence, if the non-price measures are enforced, expenditure on cigarettes will decrease.

This simulation will be applied using the same two assumptions previously employed. Table (III-16) indicates that if the educational level "as a proxy of the enforcement of non-price measures" increases, under the first assumption, the production of cigarettes decreases

[7] The non –price measures cannot be measured except for the educational level and its impact on the individual in changing habits and attitudes. Hence the education level is used as a proxy for non-price measures.

by EGP 140.628 thousand and domestic production decreases by EGP 4620.27 million. But the decrease in cigarette production and domestic production will be less if the second assumption is applied as indicated in Table (III-17).

Concerning the effect on employment, Tables (III-18) and (III-19) indicate that cigarette industry employment and national employment increase when the non-price measures are enforced. However, the increase in each will be higher using the second assumption.

In summary, the impacts of price and non-price measures on national employment are positive, but the non-price measures are more effective than the price measure because the increase in national employment will be higher and the reduction in domestic production will be less.

Conclusion

Egypt has the highest rate of tobacco consumption in the Arab world. The main factors underlying the changes in consumption trends are economic in addition to others such as an improvement in the quality of tobacco and an increase in the consumption of foreign cigarettes. Egyptian policy-makers addressed this issue because many countries resist taking serious action to adopt tobacco control measures. The fear is that reduced tobacco consumption may lead to lower employment. This study examined the impact of policies that reduce the demand for tobacco on employment in the tobacco industry and in the national economy.

The study begins with an overview of tobacco consumption and examines the status of the tobacco economy in Egypt. The public sector continues to maintain a monopoly on cigarettes through the ETC, the largest cigarette manufacturer in the Eastern Mediterranean Region. Despite the fact that Egypt does not grow its own tobacco, in recent years it has increased its cigarette exports to neighbouring countries. While Egypt has passed much tobacco control legislation it has never been enforced. Currently, however, the country is improving on the implementation of its national campaign for tobacco control. Health education has become an important tool for tobacco control. There is also a national campaign prohibiting the sale of tobacco to young adults and children that was first launched in February 1999 encouraging community participation through workshops and seminars.

The second part of the study shows the employment in the tobacco industry within the context of the general national employment. Part three examines tobacco control policies and industry employment through the input-output analysis, taking into account the indirect effects on all the other sectors. The study estimated the direct requirement from other sectors to the tobacco industry. The foreword direct coefficient of the tobacco industry indicates that this sector depends more on other sectors and plays a small role in providing materials to those other sectors. This can be explained by the tobacco industry's type of production, one that makes a final product for consumers. In terms of the backward relationship between the tobacco industry and other sectors, the data show that all the values of backward coefficients are small. This can be explained by the high dependence of the tobacco industry on imports to obtain the input for production.

In terms of the impact of the tobacco industry on national employment, two measures were taken into consideration, the first being the wage effect and the second being the employment multiplier. The results indicate that their values are very small. This study also

assesses the expected consequences of tobacco control on the economy, production and employment. It demonstrates that the economic fears that have deterred policy-makers from taking action are largely unfounded. Policies that reduce the demand for tobacco, such as a decision to increase tobacco taxes, would not cause long-term job losses. Such policies could bring health benefits without harming the economy. Tobacco control policies can be divided into measures to reduce the demand for tobacco and to reduce the supply of tobacco. The study did not depend on measures to reduce supply since tobacco is entirely imported from abroad. The study relies on demand measures to control the demand for tobacco.

Such measures include price measures and non-price measures. The former depend on raising taxes to increase cigarette prices while the latter include comprehensive bans on advertising, information measures such as mass media counter-advertising, prominent health warning labels, the publication and dissemination of research findings on the health consequences of smoking as well as restrictions on smoking in work and public places. In terms of the demand side, the study assessed the impact of the demand measures on Egypt's national employment by using two simulations: the first being to increase the price of cigarettes by 10% and the second being enforcing the non-price measures.

Assessing the impact of increasing cigarette prices on national employment depends on two assumptions. The first is that the increase in the price of cigarettes will reduce their consumption though the smokers will not increase their spending on other goods and services as a result of this reduction. The second is that smokers will increase their spending on other goods and services according to their reduced consumption of cigarettes. The results are reflected in the values of backward and forward coefficients in the Leontief Inverse Matrix.

The impacts of price and non-price measures on national employment are positive, but the non-price measures are more effective than the price measure because the increase in national employment would be higher and the reduction in domestic production would be lower.

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Appendix (1)

The increase in cigarette exports during the period 1990–1997 can be explained by the following:

(1) The quantity of exports to conventional country markets increased by 36% for cigarettes and 11.2% for molassed tobacco for the following reasons:

- Field visits to some Arab countries showed that Egypt's exports encountered fierce competition from multinational companies.
- An agreement was reached on participating in promotional costs in those markets such as Kuwait, Lebanon and Saudi Arabia.
- The conventional markets were provided with updated promotional materials in Jordan, Kuwait, Saudi Arabia, and the Sharja markets.

(2) The New Markets: Exports to such markets total EGP 5,568,000 as a result of:

- Intensive participation in certain international fairs and exhibitions.
- Provision of samples of Egypt's export products to the Exhibitions and Fairs Authority.
- Provision of samples to commercial representation abroad, in addition to many companies worldwide.

The above efforts resulted in opening new markets in such countries as:

- Argentina and Kazakhstan for Cleopatra cigarettes.
- The Czech Republic, Estonia, the Libyan Arab Jamahiriya and the United States of America for different brands of molassed tobacco.
- Hong Kong Special Administrative Region of China (Hong Kong SAR) for new Verona cigars.
- Indonesia and Jabal Ali in Dubai for cut rag products.

(3) The policy of diversification of exports through the first-time promotion of other product exports or launching of the products in new markets such as:

- Stems to Northern Ireland in the amount of EGP 2,718,000
- Cut rag and filter to Jabal Ali in Dubai in the amount of EGP 4,900,000
- Cut rag to Indonesia, in addition to cut rag to conventional markets such as Bulgaria, Greece and The Russian Federation in the amount of EGP 4,700,000
- 390,000,000 of Cleopatra Regular cigarettes 75mm were exported to Cyprus in the amount of EGP 5,550,000
- Executing a part of the annual filter contract in the amount of EGP 3,600,000 during the financial year 1998–1999 and the rest of the contract was executed during the financial year 1999–2000.

(4) The opening of the ETC African Export Market after participating in the Egyptian Products Fair in Nairobi

(5) ETC exporting different Egyptian goods to Zimbabwe

The objective behind Egypt's officially joining the 12 African states of the Common Market of East and Southern Africa States (COMESA) on 15 March 1999 is to activate commercial exchange and create a balance between Egyptian imports and exports to and from these states, thus supporting the Egyptian balance of payments.

Since ETC depends largely on importing a large part of raw tobacco from COMESA states and out of its national duty through its contribution to the State budget (about EGP 3 thousand million annually) the ETC administration made necessary contacts with the African side to activate the role of exporting Egyptian goods to African states as per the needs of these markets. To achieve this goal, ETC made a preliminary agreement in Cairo with Tobacco Leaf International (Tobacco Leaf Company in Zimbabwe in June 1999, then TLI made a preliminary survey of the Zimbabwe market to identify its needs with regard to Egyptian goods.

Hence, ETC started to contact some Egyptian companies to obtain offers and catalogues to send to Zimbabwe so as to identify the true demand in this promising market.

Appendix (2)

Part I. General overview

Table I-1. Annual cigarette consumption

Year	*Per capita consumption (Cigarette sticks)*	*Total consumption (Sticks in millions)*
1970	*581*	*12027*
1980	*1387*	*36704*
1990	*1177*	*39854*
1995	*1104*	*42436*
1997 Preliminary Data	1275	51814
2010 (Targeted)	1148	46632.6

Source: Ministry of Health and Population, National Health Plan 2000

Table I- 2. Per capita consumption, sticks per year and sticks per week 1990–1998

Years	Sticks year	Sticks week	Sticks day
1990	744	14.3	2.0
1991	758	14.6	2.1
1992	676	13.0	1.9
1993	670	12.9	1.8
1994	656	12.6	1.8
1995	701	13.5	1.9
1996	747	14.4	2.0
1997	808	15.5	2.2
1998	910	17.5	2.5

Source: ERC based Eastern Tobacco Company and USDA data, United Nations
Note: Based on total population.

Part II. Tobacco industry employment

Table II-1. Employment in tobacco industry (000)

Item	Employment industrial public sector (1)	Employment in tobacco industry (2)	Ratio (2/1) %
1995/96	723007	13303	1.8
1997/98	569507	13662	2.4

Source: Columns (1) , (2) : CAMPA, Annual Industrial Production Statistics, Public Sector

Table II-2. Gender employment in manufacturing sector and tobacco industry (000)

Item	Males				Females			
	Manufacturing sector		Tobacco industry		Manufacturing sector		Tobacco industry	
	Numbers	%*	Numbers	%*	Numbers	% **	Numbers	%* *
1995/96	647575	89.6	12385	93.0	75431	10.4	918	6.9
1997/98	513961	90.2	12754	93.4	55546	9.7	908	6.6

* : the percentage of male employment to total employment in this sector.
**: the percentage of females employment to total employment in this sector.
Source: CAPMAS, op, cit.

Table II-3. Distribution of employment in tobacco industry per function

Item	No. of workers (000)	The percentage of each item to total numbers %
Management	3571	26.1
Production	5323	38.9
Technical services	1563	11.4
Distribution & selling	1958	14.3
Public services	1247	9.1
Total	13662	100

Source: CAMPAS, op, cit.

Table II-4. Number of trainees in training plan in Eastern Tobacco Company (000)

Level	Trainees inside EC	Trainees outside EC	Trainees inside & outside EC	Training percentage%	
				Inside	outside
Total	1771	1351	3122	57	43

Source : http://www.easternegypt.com/sharkya.nsf/social services

Label definitions

Sector

1	Agriculture
2	Mining& petroleum
3	Food industries
4	Leverage
5	Tobacco
6	Textile
7	Leather&leather products
8	Wood &wood products
9	Paper products &printing
10	Chemical products
11	Oil products
12	Rubber
13	Metal&non metal products
14	Basic metal products
15	Machinery
16	Transport devices
17	Miscellaneous
18	Electricity
19	Construction &maintenance
20	Finance &trade& insurance
21	Hotels
22	Wholesale &retailing &communication
23	Housing
24	Services

Table III-1. A 24 sector input–output table (1991–1992)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.17	0.00	0.11	0.02	-	0.21	0.02	0.00	0.00	0.04	-	0.01	0.01	-	0.00	0.01	-	-	-	0.00	0.11	0.00	-	0.00
2	0.00	0.00	0.00	0.00	-	0.00	-	0.00	0.00	0.03	0.04	0.01	0.23	0.05	0.00	0.00	-	0.05	0.03	-	0.00	-	-	0.00
3	0.01	-	0.06	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	-	-	-	-	-	-	0.18	-	-	0.00
4	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.00	0.00	0.00
5	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-
6	0.00	0.00	0.00	-	-	0.12	0.02	0.00	0.00	0.00	-	0.01	0.00	0.00	0.00	-	0.00	-	-	0.00	0.00	0.00	0.00	0.00
7	-	-	-	-	-	0.00	0.27	0.00	-	-	-	0.00	-	-	0.00	0.00	0.03	-	-	-	-	-	-	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00
10	0.01	0.00	0.00	0.04	-	0.01	0.04	0.03	0.01	0.02	0.00	0.27	0.00	0.01	0.00	0.00	0.01	0.00	0.04	0.00	0.01	0.00	0.01	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.02	0.00	0.00	0.00	0.16	0.01	0.00	0.01	0.06	0.00	0.00
12	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00
13	-	-	0.00	-	-	-	-	0.00	0.00	0.00	-	-	0.08	0.00	0.00	-	-	-	0.06	-	-	-	-	0.00
14	-	-	-	-	-	-	-	0.00	-	0.00	-	0.01	0.00	0.23	0.06	0.02	0.01	-	0.05	-	-	-	-	0.00
15	0.00	0.00	0.01	0.02	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.02	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.01
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.00	0.00	0.01	0.01	0.00	0.03	0.01	0.01
17	0.00	-	0.00	-	-	0.00	0.00	-	-	0.00	-	0.00	0.00	-	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.01	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00
19	0.01	0.01	0.05	0.03	0.00	0.04	0.01	0.01	0.00	0.01	0.01	0.04	0.05	0.04	0.00	0.01	0.00	0.07	0.04	0.02	0.04	0.03	0.00	0.01
20	0.03	0.01	0.04	0.03	0.02	0.08	0.08	0.03	0.02	0.04	0.00	0.09	0.04	0.02	0.05	0.02	0.09	0.05	0.06	0.05	0.05	0.07	0.01	0.01
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-	0.01	-	0.00
22	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.04	0.04	0.00
23	0.00	0.01	0.01	0.01	0.00	0.01	0.02	0.00	0.01	0.01	0.00	0.04	0.00	0.02	0.00	0.01	0.05	0.00	0.01	0.02	0.01	0.01	0.04	0.01
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.03	0.01

Source: CAMPAS

Table III-2. Direct forward and backward coefficient of tobacco industry (1991–1992)

Forward	**0.077**
Backward	**0.104**

Source: Calculated from I-O Tables (1991-1992)

Table III-3. Direct backward coefficient of tobacco industry

Sector	Coefficient
Food industries	0.008
Paper product & printing	0.006
Rubber & plastic	0.0001
Metal products	0.001
Transportation devices	0.0004
Electricity	0.0001
Construction & maintenance	0.0008
Wholesale & retailing and communication	0.006
Machinery	0.001
Services	0.0001
Finance, trade and insurance	0.01
Housing	0.001

Source: Calculated from I-O Table 1991–1992

Table III-4. Direct forward and backward coefficient of tobacco industry (1996–1997)

Forward	**0**
Backward	**0.07**

Source: Calculated from I-O Tables (1996-1997)

Table III-5. The coefficient value of Leontief Inverse Matrix (1991–1992)

	Forward	Backward
1	0.08	0.06
2	0.07	0.04
3	0.06	0.06
4	0.04	0.06
5	0.05	0.05
6	0.05	0.07
7	0.06	0.7
8	0.05	0.05
9	0.05	0.05
10	0.07	0.05
11	0.06	0.05
12	0.05	0.07
13	0.05	0.07
14	0.07	0.07
15	0.05	0.05
16	0.05	0.05
17	0.04	0.06
18	0.05	0.06
19	0.07	0.06
20	0.10	0.05
21	0.04	0.07
22	0.06	0.06
23	0.06	0.05
24	0.05	0.05

Table III-6. The coefficient value of Leontief inverse matrix in tobacco industry in 1991–1992

Forward	**0.05**
Backward	**0.04**

Source: calculated from I-O Table 1991/92

Table III-7. The wages in tobacco industry and its ratio to manufacturing sector (000)

	Wages in tobacco industry	Wages in manufacturing industry	(1)/(2)%
1991/1992	97.428	3530.858	2.7
1997/1998	151.934	5228.273	2.9

Source: the Annual Industrial Production Statistics 1991–1992, 1997–1998

Table III-8. Wage effect by using direct and indirect effect in 1991-1992

Item	Coefficient
Direct effect	0.027
Indirect effect	0.035

Source: Calculated from I –O Tables 1991–1992

Table III-9. Direct employment multiplier for all the sectors in the Egyptian economy in 1991–1992

Sector	Direct employment multiplier coefficient
Agriculture	0.12
Mining and petroleum	0.003
Food products	0.12
Beverage	0.25
Tobacco	0.06
Textile	0.28
Leather & leather products	0.16
Wood & wood products	0.04
Paper product & printing	0.17
Chemicals products	0.21
Oil products	0.04
Rubber product & plastic	0.19
Metal & non metal products	0.21
Basic metals & electric product	0.20
Machinery & equipment	0.30
Transportation devices	0.19
Miscellaneous products	0.09
Electricity	0.02
Construction & maintenance	0.07
Finance & trade and insurance	0.07
Hotels	0.03
Transportation &communication	0.03
Housing	0.03
Services	0.23

Source: calculated from I-O Table 1991–1992

Table III-10. Direct and indirect employment multiplier for all the sectors in the Egyptian economy in 1991–1992

Sector	Direct employment multiplier coefficient
Agriculture	0.16
Mining and petroleum	0.008
Food products	0.17
Beverage	0.31
Tobacco	0.07
Textile	0.39
Leather &leather products	0.27
Wood & wood products	0.06
Paper product & printing	0.16
Chemicals products	0.23
Oil products	0.05

Rubber product & plastic	0.29
Metal & non metal products	0.25
Basic metals & electric product	0.30
Machinery & equipment	0.32
Transportation devices	0.21
Miscellaneous products	0.13
Electricity	0.05
Construction & maintenance	0.13
Finance & trade and insurance	0.09
Hotels	0.12
Transportation & communication	0.07
Housing	0.06
Services	0.26

Source: calculated from I-O Table 1991–1992

Table III-11. Direct and indirect employment multiplier for all the sectors in the Egyptian economy in 1996–1997

Sector	Direct employment multiplier coefficient
Agriculture	0.09
Mining and petroleum	0.007
Food products	0.06
Beverage	0.01
Tobacco	0.01
Textile	0.07
Leather & leather products	0.03
Wood & wood products	0.01
Paper product & printing	0.02
Chemicals products	0.04
Oil products	0.01
Rubber product &plastic	0.02
Metal &non metal products	0.01
Basic metals &electric product	0.02
Machinery &equipment	0.04
Transportation devices	0.02
Miscellaneous products	0.03
Electricity	0.02
Construction & maintenance	0.04
Finance & trade and insurance	0.03
Hotels	0.03
Transportation & communication	0.02
Housing	0.02
Services	0.20

Source: Calculated from I-O Tables 1996–1999

Table III-12. The impact of increasing prices of cigarettes on domestic production (first assumption) EGP millions

The change in domestic production	The expected value of domestic production	The current value of domestic production (96/97)	Sectors
-3.64837	60655.23	60658.88	Agriculture
-176.783	15581.59	15758.38	Mining& Petroleum
-2.43375	30654.23	30656.67	Food Industries
-0.35961	1919.708	1920.068	Leverage
-1552.27	2357.73	3910	Tobacco
-5.59216	15964.86	15970.45	Textile
-20.0599	17889.73	17909.79	Leather & Leather products
-1.15378	3597.578	3598.732	Wood &Wood products
-36.019	4449.375	4485.394	Paper products &Printing
-11.8999	9063.448	9075.348	Chemical Products
-215.944	11538.93	11754.88	Oil Products
-5.06998	561.886	566.956	Rubber
-71.8523	10741.66	10813.51	Metal & non-metal Products
-3548.66	7480.733	11029.4	Basic Metal Products
-20.671	3619.044	3639.715	Machinery
-16.4968	5044.405	5060.902	Transport Devices
-2.22758	2273.272	2275.5	Miscellaneous
-213.981	6524.019	6738	Electricity
-53.105	28936.9	28990	Construction &Maintenance
-158.207	67692.79	67851	Finance &Trade& Insurance
-0.00442	7295.079	7295.083	Hotels
-25.96	30427.53	30453.49	Wholesale &Retailing &Communication
-2.64579	5582.354	5585	Housing
-24.212	25432.21	25456.42	Services
-6169.3	375284.3	381453.6	Total

Source : Calculated from I-O Tables 1996–1997

Table III-13. The impact of increasing prices of cigarettes on national employment (000) (first assumption)

The change in employment	The expected level of employment	The current level of employment (1996-1997)	Sector
1316.532	6063.532	4747	Agriculture
73.20812	116.2081	43	Mining& Petroleum
1581.223	1869.393	288.17	Food Industries
22.01355	25.07055	3.057	Leverage
-14.2607	34.4475	48.7082	Tobacco
621.7633	1244.163	622.4	Textile
556.257	571.134	14.877	Leather&Leatherproducts
21.79027	41.96027	20.17	Wood &Wood products
87.3129	114.4129	27.1	Paper products &Printing
96.10558	418.1096	322.004	Chemical Products
53.04123	141.4812	88.44	Oil Products
5.699008	11.81301	6.114	Rubber
54.47635	202.2264	147.75	Metal & non metal Products
40.91909	156.0661	115.147	Basic Metal Products
31.11415	154.2041	123.09	Machinery
29.50327	115.9133	86.41	Transport Devices
30.49204	88.60204	58.11	Miscellaneous
38.09766	158.0977	120	Electricity
240.0509	1380.051	1140	Construction &Maintenance
441.7933	2120.793	1679	Finance &Trade& Insurance
128.0868	273.0868	145	Hotels
175.2431	879.2431	704	Wholesale &Retailing &Communication
11.86451	230.8645	219	Housing
319.5487	5309.549	4990	Services
5961.875	21720.42	15758.55	Total

Source: Calculated from I-O Tables 1996–1997

Table III-14. The impact of increasing prices of cigarettes on domestic production (second assumption)EGP millions

The change in domestic production	The expected value of domestic production	Sector
473.8448	61132.72	Agriculture
-144.585	15613.79	Mining& petroleum
236.8667	30893.53	Food industries
12.86967	1932.938	Leverage
-1518.3	2391.704	Tobacco
99.37694	16069.83	Textile
113.5027	18023.29	Leather & leather products
21.65323	3620.385	Wood &wood products
-8.84607	4476.548	Paper products & printing
38.45104	9113.799	Chemical products
-174.363	11580.51	Oil Products
-1.66824	565.2878	Rubber
-36.7092	10776.8	Metal & non-metal products
-3528.78	7500.614	Basic metal products
3.23126	3642.946	Machinery
13.12593	5074.028	Transport devices
6.032241	2281.532	Miscellaneous
-175.175	6562.825	Electricity
-45.2612	28944.74	Construction & maintenance
286.9809	68137.98	Finance &trade & insurance
10.57043	7305.653	Hotels
105.9229	30559.41	Wholesale & retailing & communication
45.80888	5630.809	Housing
179.4676	25635.89	Services
-3985.98	377467.6	Total

Source: Calculated from I-O Tables 1996-1997

Table III-15. The impact of increasing prices of cigarette on employment(000) (second assumption)

The change in employment	The expected level of employment	Sector
1364.266	6111.266	Agriculture
73.44826	116.4483	Mining & petroleum
1595.816	1883.986	Food industries
22.18632	25.24332	Leverage
-13.7643	34.94387	Tobacco
629.9437	1252.344	Textile
560.521	575.398	Leather & leather products
22.05628	42.22628	Wood &wood products
88.01164	115.1116	Paper products &printing
98.42834	420.4323	Chemical products
53.55107	141.9911	Oil products
5.770525	11.88453	Rubber
55.13797	202.888	Metal & non metal products
41.33385	156.4809	Basic metal products
32.1326	155.2226	Machinery
30.18396	116.594	Transport devices
30.81397	88.92397	Miscellaneous
39.03806	159.0381	Electricity
240.425	1380.425	Construction &maintenance
455.7409	2134.741	Finance &trade& insurance
128.4826	273.4826	Hotels
179.054	883.054	Wholesale &retailing &Communication
13.86841	232.8684	Housing
362.0714	5352.071	Services
6108.517	21867.06	Total

Source: Calculated from I-O Tables 1996–1997

Table III-16. The impact of non-price measures on domestic production (first assumption) EGP millions

The change in domestic production	The expected value of domestic production	Sector
-2.71012	60656.17	Agriculture
-173.829	15584.55	Mining& petroleum
-1.54291	30655.12	Food industries
-0.25586	1919.812	Leverage
-140.628	3769.372	Tobacco
-5.03892	15965.41	Textile
-19.5925	17890.19	Leather & leather products
-1.01344	3597.719	Wood & wood products
-16.6366	4468.757	Paper products & printing
-8.91887	9066.429	Chemical products
-212.523	11542.35	Oil products
-2.57235	564.3836	Rubber
-53.8603	10759.65	Metal & non-metal products
-3534.9	7494.491	Basic metal products
-11.7865	3627.928	Machinery
-13.8042	5047.098	Transport devices
-2.09023	2273.41	Miscellaneous
-208.434	6529.566	Electricity
-47.7697	28942.23	Construction & maintenance
-121.395	67729.61	Finance &trade& insurance
-0.00331	7295.08	Hotels
-16.9491	30436.54	Wholesale & retailing & communication
-2.1767	5582.823	Housing
-21.8375	25434.58	Services
-4620.27	376833.3	Total

Source: Calculated from I-O Tables 1996–1997

Table III-17. The impact of non-price measures on domestic production (second assumption) EGP Millions

Sector	The expected value of domestic production	The change in domestic production
Agriculture	60699.43	40.54806
Mining& petroleum	15587.46	-170.912
Food industries	30676.8	20.13634
Leverage	1921.011	0.94263
Tobacco	3772.378	-137.622
Textile	15974.92	4.470675
Leather & leather products	17902.29	-7.49253
Wood &wood products	3599.785	1.052745
Paper products & printing	4471.218	-14.1759
Chemical products	9070.99	-4.35751
Oil products	11546.12	-208.756
Rubber	564.6917	-2.2643
Metal & non-metal products	10762.84	-50.6775
Basic metal products	7496.292	-3533.1
Machinery	3630.093	-9.62157
Transport devices	5049.781	-11.1206
Miscellaneous	2274.158	-1.34194
Electricity	6533.081	-204.919
Construction & maintenance	28942.94	-47.0594
Finance &trade& insurance	67769.94	-81.0649
Hotels	7296.038	0.954708
Wholesale &retailing &communication	30448.49	-5.00172
Housing	5587.213	2.213
Services	25453.04	-3.38542
Total	377031	-4422.56

Source: Calculated from I-O Tables 1996–1997

Table III-18. The impact of non-price measures on national employment (000)(First assumption)

The change in employment	The expected level of employment	Sector
1316.626	6063.626	Agriculture
73.23015	116.2302	Mining& petroleum
1581.277	1869.447	Food industries
22.0149	25.0719	Leverage
6.364024	55.07222	Tobacco
621.8065	1244.206	Textile
556.2719	571.1489	*Leather & leather products*
21.79191	41.96191	Wood &wood products
87.81131	114.9113	Paper products &printing
96.2431	418.2471	Chemical products
53.08318	141.5232	Oil products
5.751517	11.86552	Rubber
54.81508	202.5651	*Metal & non metal products*
41.20612	156.3531	Basic metal products
31.49271	154.5827	Machinery
29.56515	115.9751	Transport devices
30.49739	88.60739	Miscellaneous
38.23208	158.2321	Electricity
240.3053	1380.305	Construction &maintenance
442.9466	2121.947	Finance &trade& insurance
128.0868	273.0868	Hotels
175.5035	879.5035	Wholesale &retailing &communication
11.88391	230.8839	Housing
320.0444	5310.044	Services
5986.85	21745.4	Total

Source: Calculated from I-O Tables 1996–1997

Table III-19. The impact of non-price measures on national employment (000) (Second assumption)

Sector	The expected value of employment	The change in employment
Agriculture	6067.95	1320.95
Mining& petroleum	116.2519	73.25191
Food industries	1870.769	1582.599
Leverage	25.08755	22.03055
Tobacco	55.11614	6.407943
Textile	1244.948	622.5476
Leather & leather products	571.5352	556.6582
Wood &wood products	41.98601	21.81601
Paper products &printing	114.9746	87.87459
Chemical products	418.4575	96.45352
Oil products	141.5694	53.12936
Rubber	11.87199	5.757994
Metal & non metal products	202.625	54.875
Basic metal products	156.3907	41.24368
Machinery	154.675	31.58495
Transport devices	116.0368	29.62681
Miscellaneous	88.63656	30.52656
Electricity	158.3173	38.31727
Construction & maintenance	1380.339	240.3392
Finance & trade& insurance	2123.21	444.2102
Hotels	273.1227	128.1227
Wholesale &retailing &communication	879.8487	175.8487
Housing	231.0655	12.06546
Services	5313.897	323.8967
Total	21758.68	6000.134

Source: Calculated from I-O Tables 1996–1997

Tobacco-related issues in Kenya

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Introduction

According to an authoritative source (B.A.T., 1990), a trader set up the first cigarette shop in Kenya at the Indian Ocean port city of Mombasa in 1907. In 1928, a factory was constructed at Jinja, Uganda as an import substitution concern to serve the East African region, in particular, Kenya, Uganda and the United Republic of Tanzania. It was not until 1956 that a modern cigarette factory was built in Nairobi to serve the needs of a rapidly expanding smoking clientele. Another independent cigarette factory was built in 1988 (Mastermind Tobacco (K) Limited, 1991). Today, cigarette smoking ranks first among leading substance usage, its frequency of use being followed by alcohol, bang, miraa (chat), volatile solvents and narcotics.

This paper provides information on the tobacco industry in Kenya that will enable policy-makers to make informed decisions on issues affecting the industry. To this end, the paper gives an overview of the industry supply, demand and trade status. It then examines the country's employment situation and regulatory framework. Some possible scenarios are advanced on the likely impact of tobacco control on employment before drawing certain conclusions and proposing recommendations for policy and research.

Overview

In Kenya, tobacco is grown in small plots—some as small as a quarter of a hectare—by small-scale farmers who own, on the average, under two hectares of landholding. Cultivation extends into the Central, Eastern, Western and Nyanza Provinces, with a high concentration in Bungoma, Busia, Embu, Meru, Kirinyaga, Kitui, Kuria, Migori, Mt. Elgon, Murang'a, Sagana, Siaya, South Nyanza, Suba, and Teso Districts.

As can be seen from Table 1, the land area planted with tobacco increased between 1996 and 2000 from about 14 000 to 16 000 hectares.

Table 1. Production statistics

	1996	**2000**
Area planted (hectares)	13 943	15 768
Output of tobacco leaves (tonnes)	33 070	20 213
Tobacco sales (1995 Kenya shilling million)	1 672	872
Numbers of households	31 398	29 000
Household income (1995 KSh)	53 240	30 061
Total agricultural cultivation area ('000 Ha.)	6 302	6 769
Share of tobacco-growing land (%)	0.22	0.23

Sources: B.A.T., Tobacco Newsletter, various issues; MTK, Mastermind Newsletter, various issues; Ministry of Agriculture, Statistics on Food and Industrial Crops Production (November, 2001), pp.12-15 & 63-64

This could have been due to the duopolistic tobacco manufacturing companies, who vigorously campaigned and competed to entice their contracted farmers to expand their tobacco-growing area by offering them higher prices and subsidized inputs. The average area planted with tobacco increased from 0.4 to 0.5 hectares per farmer.

The total number of tobacco-farming households, however, dropped from about 31 000 to 29 000, possibly because of "major restructuring" in leaf growing[1]. The production of tobacco did as well, from around 33 000 to 20 000 tonnes due largely to weather vagaries, with the El Niño and La Niña weather pattern falling at the tail end of this period. This resulted in a drop in the average tobacco farmers earnings from 53 000 to 30 000 Kenya shillings per annum (equivalent to a reduction from US$ 928 to $US 394).

The share of all cultivated land consumed by tobacco growing has remained more or less constant at less than one quarter of 1%. It should be noted, however, that double count is possible due to the practice of sequentially planting another seasonal crop on the same land that would have been utilized previously during the same year for growing tobacco during the tobacco-growing season.

Tobacco consumption

Table 2(a) gives the data on number of cigarettes and cigars consumed over the period 1991 to 1999. The prevalence rates are provided in Table 2(b).

Table 2(a). Trends in cigarette and cigar consumption

Year	Cigarettes & cigars consumed (million sticks)	Kenya's population (million)*	Per capita annual consumption (Sticks)	Index of per capita annual consumption (1991=100)
1991	7 059	22.9	308	100
1992	6 570	23.5	280	91
1993	7 001	24.2	289	94
1994	6 786	24.9	273	89
1995	4 320	25.6	169	55
1996	6 291	26.3	239	78
1997	5 662	27.1	209	68
1998	6 254	27.9	224	73
1999	4 799	28.7	164	53

*Estimated using the 1989-1999 intercensal growth rate of 2.9% per annum.
Source: Republic of Kenya, Statistical Abstract, various issues; and Ministry of Health, Health Management Information Systems Report (April, 2001), p. 3.

[1] A hint of this is contained in British American Tobacco Kenya, *Annual Review 2000*, p. 8.

Table 2(b). Smoking prevalence (% of group)

	1986	1993	1995	1996
Hospital workers				
Regular smokers	54			
Occasional smokers	1			
Youth				
Rural		15		
Urban		10		
Adult				
Men			67	
Women			32	
Primary school teachers				
Men				50
Women				4

Sources: Kamanga, HHO, Odhiambo JA, Gicheha C. (March 2001) Kenya Country Profile; Tobacco Consumption among Primary School Teachers in Nairobi. *The East African Medical Journal*, Vol. 78, No. 3, pp. 119-123. WHO web site.

The per capita consumption of cigarettes in the last ten years or so has been fluctuating on a downward trend, dropping by almost 50% between 1991 and 1999. This could be due to the poor economy and the attendant loss of purchasing power. It could also be the result of the adverse publicity on smoking with the dissemination of information on its dangers. The extent of smoking, that is, smoking prevalence, seems to be over 50% among adults, an adult being defined as a person of 20 years or above.

An indication of the smoking pattern is given by smoking prevalence with respect to age and gender. Among the youth, prevalence rate is low in both rural and urban areas. It is worth noting, however, that the majority of adults who smoke an average of one cigarette or more per day in a year started smoking when they were between 15 and 24 years of age (Kwamanga, Odhiambo, Gicheha, 2001). Among women some 30% smoke cigarettes.

Tobacco: international trade

Data on Kenya's international trade in tobacco and cigarettes for 2000 is given in Table 3. Overall, Kenya is a net exporter of tobacco and tobacco products, exporting around 2 168 million Kenya shillings (equivalent to US$ 28.46 million) while importing less than a quarter of that, thus showing a favourable balance of trade of some 1 700 million Kenya shillings. It is a net importer of unprocessed tobacco (unstemmed or unstripped tobacco leaf), mostly from the Democratic Republic of the Congo and Uganda, but from Switzerland as well. Unprocessed and partly processed tobacco finds its way to the Democratic Republic of the Congo, France, Ireland, Japan and the United Kingdom, among others.

Kenya is a net exporter of cigarettes, the biggest markets being the Democratic Republic of the Congo, Ethiopia, the Netherlands, Somalia, South Africa, Sudan, Uganda and the United Republic of Tanzania. However, it also imports them from Belgium, Central and South America, Germany, India, South Africa, Switzerland, the United Arab Emirates and

Table 3. Exports, imports and balance of trade, 2000

	Exports (X)			Imports (M)			Balance of trade
	Weight (Tonnes)	Value (Kenya shillings) (Millions)	Top three destinations	Weight (Tonnes)	Value (Kenya shillings) (Millions)	Top three origins	X-M (Kenya shillings) (Millions)
Tobacco not stemmed or stripped	591.6	44.0	Dem. Repub. of the Congo, South Africa, Congo	4.2	307.7	Dem. Repub. of the Congo, Uganda, Switzerland	-263.7
Tobacco partly or wholly stemmed/ stripped	4 745.7	538.4	Dem. Repub. of the Congo, France, Japan	13.9	3.8	Egypt, Uganda, n.a.	534.6
Tobacco refuse	0.9	0.1	Comoros, n.a.	0.4	98.6		-98.5
Smoking Tobacco, snuff & homogenized or constituted tobacco	62.4	15.7	Dem. Repub. of the Congo, Comoros, United Republic of Tanzania	18.5	0.9	Switzerland, United Arab Emirates	14.8
Cigarettes	2 826.1	1 552.7	Somalia, United Republic of Tanzania, Dem. Repub. of the Congo	41.4	53.0	UK, Switzerland, India	1 499.7
Cigars, cheroots & cigarillos	n.a.	n.a.	n.a.	1.1	3.3	Switzerland, Netherlands, Germany	-3.3
Other manufactured tobacco	0.2	16.6	South Africa, Democratic Repub. of the Congo, n.a.	0.4	0.3	India, UK, United Arab Emirates	16.3
TOTAL	**8 226.8**	**2 167.5**		**79.9**	**467.6**		**1 699.9**
All domestic exports = 2 690 540 million Kenya shillings							
Tobacco and cigarettes export = 0.081% of all exports							

n.a. means not applicable

Source: Central Bureau of Statistics, *Direction of Trade Tables* (November, 2001)

the United Republic of Tanzania. Tobacco and tobacco products constitute less than one-tenth of 1% of the country's total exports. The only known trade restriction is an *ad valorem* import duty rate of 25% and a value-added tax (VAT) of 15%.

Tobacco policy parameters

Domestic subsidies

There is evidence of subsidization in leaf production. Tobacco companies, as a matter of course, give farmers "subsidized farm inputs, a credit package of unsecured interest-free loans in the form of farm inputs—free seedlings for aforestation as well as provision of wood fuel for tobacco-curing purposes and for domestic requirements" (MTK, 1998). Half of the fertilizer is provided "totally free of charge" (B.A.T., 1994).

Taxation structure

In 1991, payment to tobacco farmers was done net of 6% of earnings. This farm-level taxation on leaf was discontinued in 1997 when it stood at an effective rate of 15%. Currently, the excise tax rate on locally manufactured cigarettes is 135% ex-factory. Table 4 shows excise taxes collected on tobacco and cigarettes between 1990 and 2000.

Table 4. Excise taxes and revenue (in real terms, base year 1995) 1990–2000

Year	Tobacco excise revenue (Kenya shillings) (Millions)	Cigarette excise revenue (Kenya shillings) (Millions)	Total tobacco & cigarette taxes (Kenya shillings) (Millions)	Total Government current revenue (Kenya shillings) (Millions)	Share of tobacco & cigarette taxes (%)
1990		6 386	6 386	121 290	5.3
1991	41.8	4 485	4 526	140 092	3.2
1992	37.9	4 461	4 499	130 995	3.4
1993	1.3	4 285	4 286	131 358	3.3
1994	28.2	4 008	4 037	122 922	3.3
1995	33	4 221	4 254	142 843	3.0
1996	264.7	4 105	4 370	133 716	3.3
1997		3 851	3 851	136 273	2.8
1998		3 726	3 726	139 346	2.7
1999		3 629	3 629	134 306	2.7
2000		3 371	3 371	142 987	2.4

Source: Republic of Kenya, *Economic Survey* and *Statistical Abstract* (Nairobi: Government Printer), various issues.

The contribution of excise tax on tobacco and its products has continued to decline steadily from about 5% of Government revenue in 1990 to 2% in 2000. While this is due largely to the rising importance of other sources of Government revenue, such as the VAT, it is also reflects the declining per capita consumption of cigarettes by some 50%. (See previous section on consumption).

In order to curb tax evasion, reduce smuggled stock, curtail sale of non-duty paid export products in local markets and level the playing field for all actors, the Kenya Revenue Authority introduced excise stamps on all cigarette packets manufactured or legally imported

into Kenya after 14 May 2001[2]. Failure to comply with these measures results in the merchandise being destroyed and a 1.5 million Kenya shilling fine (equivalent to US$ 19,093). The stamps represent about 1% of the tobacco revenue (B.A.T., 2001). This should have the effect of generally raising the average price of cigarettes and possibly reducing the prevalence of smoking.

Tobacco industry employment

The tobacco industry encompasses a broad range of activities, the most obvious ones being agricultural, manufacturing and commerce. Table 5 shows the employment level at various stages in the production and distribution of tobacco from the primary agricultural sector, through the secondary to the tertiary sectors.

Table 5. Tobacco industry employment, 2000

Production stage	Number of workers
Tobacco farming	87 000
Leaf-buying & processing	1 100
Cigarette manufacturing	1 051
Cigarette distribution (wholesale & retail)	91 040
Total tobacco employment (number)	122 202
Total recorded employment in Kenya (number)	5 893 000
Total tobacco employment = 2.1% of total recorded employment	

Sources: BAT and MTK, various Newsletters and reports; and author's estimate at farm-level.

It is roughly estimated that a typical farmer engages two people to assist in the tending of tobacco, usually but not exclusively family labourers. Hence the 29 000 farmers end up creating employment for three people, including themselves. Tobacco companies employ extension officers and leaf buying agents. They also employ workers for manufacturing and packaging, in addition to appointing wholesalers for distribution of cigarettes. Retailing is undertaken by both the formal and informal sectors, the latter selling in both packets and by the stick. Total direct employment in the tobacco industry was, therefore, estimated at 122 202 in 2000. This comes to 2.1% of the total recorded employment in Kenya in that year.

Technology plays a crucial role in tobacco industry employment. The industry is quite vertically integrated and somewhat ambivalent in the area of employment creation. It is labour-intensive in its agricultural operations, highly capital-intensive in its manufacturing stage, but labour-consuming in its marketing and distribution. Employment stands at six people per hectare on the farms, but some 5.4 million Kenya shillings (US$ 70,888) worth of capital (property, plant and equipment) is invested per employee (B.A.T., 2000).

Tobacco control policies

Legislation was enacted in 1980 banning cigarette advertising on television, introducing health warnings on cigarette packets made in Kenya and prohibiting smoking on public transportation and in all public places.

[2] The Customs and Excise Act, Cap 472.

The Public Health Rules of 31 July 1984 (Warning on Cigarette Smoking) specified that no person may import or sell any cigarettes in Kenya unless a health warning in both English and Swahili is printed on the packet. The printed warning was specified as "Ministry of Health Warning: Cigarette Smoking is Harmful to Your Health." The ban on cinema advertising was imposed in January 1990.

A tobacco control bill whose objective is to control the manufacture, advertisement, sale, promotion and use of tobacco products has been proposed. Examples are prohibiting the sale of individual cigarettes, a ban on advertising and prohibiting cigarette companies from sponsoring social, cultural, sports and economic activities.

Regarding tobacco product regulation, the Kenya Bureau of Standards prescribes nicotine levels of not more than 2.2 milligrams and allows tar levels of 10, 11-17, and 18-25 milligrams respectively per cigarette for low-, medium- and high-tar cigarettes. Internationally, such tar levels are rarely allowed to exceed 15 milligrams (*Daily Nation*, 2001).

Tobacco control regime's impact on employment

Driving forces

Effective tobacco control measures, such as price increases through higher tax rates or a comprehensive ban on advertising and promotion like that proposed in the tobacco control bill would lead to reduced cigarette consumption and could adversely affect tobacco-related employment in the short term.

At first sight, these outcomes may seem to create a conflict between the health perspective and the economic perspective. A common view is that, since smoking is damaging to human health, it should be eliminated through moral persuasion, rather than banned, which could raise the spectre of alcohol prohibition. The other perspective tries to avoid the harmful economic consequences of a policy measure.

Tobacco control policy and employment scenarios

A key issue to emerge is whether the economic benefits of tobacco take precedence over those of health. Two critical variables are discernible: the probability that control will successfully diminish the tobacco market and the likelihood that the effect on the economy will be harmful. Likely scenarios are:

- If the probability of successfully controlling the tobacco market is low and the probability that the economic effect is harmful is also low, the outcome is likely to be business as usual and the status quo would be maintained. Employment levels would be maintained and augmented.
- If the probability of successfully controlling the tobacco market is low and the probability of harmful economic effects is high, then it is likely to be a business as usual scenario, with the employment situation unaffected, as above.
- If the probability of successfully controlling the tobacco market is high and that of harmful economic effects is also high, chances are that the industry would use considerable resources to advertise this scenario. It is worth noting that even if tobacco control measures are effective and the probability of harmful economic effect

is *not* high, it is in the best interest of the tobacco industry to falsely submit that tobacco control might hurt the economy.
- If the probability of successfully controlling the tobacco market is high and the probability of harmful economic effect is low, then immediate action taken on tobacco control would have the desirable outcome.

These four scenarios require quantification. First, effective tobacco control policies exist and can make a difference, which renders the first two scenarios implausible. To assess quantitatively the likelihood of the last two scenarios would require the use of a general equilibrium model, like input–output analysis, which would illuminate the full effect of a policy change. Kenya input–output (I-O) tables are available for 1967, 1971, 1976, 1981, and 1986. Unfortunately, these are quite dated. Moreover, none gives the tobacco industry a separate recognition, rather the industry is lumped with beverages. One would need an update of the I-O table and a re-estimation breaking down "beverages and tobacco" before rigorously translating gross output requirements into employment coefficients to determine the impact on employment of reduced spending on tobacco products.

Conclusion

In Kenya, tobacco is grown in small-scale farms by some 29 000 farmers and takes up about 16 000 hectares in a wide variety of ecological zones. Three varieties are grown: Virginia Leaf flue-cured, Burley air-cured and Dark fired-cured tobacco. The tobacco companies subsidize fertilizer and other inputs to tobacco growing. The leaf is bought by two cigarette-manufacturing companies, which in 2000 paid out about 2.4 thousand million Kenya shillings to farmers. Kenya is a net exporter of tobacco and tobacco products, mainly to the countries in the Central, Eastern and Southern Africa region. Tobacco and tobacco products constitute less than one-tenth of 1% of Kenya's exports and contribute slightly over 2% to the Government's current revenue. An excise tax of 135% is in force and imports are charged 25% duty. The tobacco industry represents about 2% of Kenya's total employment.

Per capita cigarette consumption is declining, while smoking prevalence among adults is about 50%. Tobacco control is evident in bans on advertising in the electronic media (radio and television), restrictions on smoking in public places and mandatory warnings on cigarette packets that smoking is damaging to health. By using the probability of harmful economic effects and the probability that tobacco control is successful as logic axes, four plausible scenarios are created to generate probable effects on employment. There are many grey areas.

It is recommended that, as an aid to policy, research be undertake to illuminate such questions as:

- Would policies that reduce the demand for tobacco, such as a decision to increase tobacco taxes, harm the economy by causing long-term losses in jobs, Government taxes and foreign exchange in Kenya?
- What are the relative influences of taxes, bans on advertising and sponsorships, tobacco control, prices and purchasing power on cigarette smoking and prevalence?
- What economic costs are imposed by active smokers on passive smokers?
- What are the viable alternatives for farmers if they were to move out of growing tobacco?
- How effective are measures to reduce tobacco supply through crop substitution?

- What is the incentive structure for farmers to grow other crops as part of their livelihoods?

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Tobacco in Viet Nam: the industry, demand, control policies and employment

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Generating employment and reducing poverty are among the Viet Nam Government's current top priorities. Because it is relatively profitable and easy to grow, the tobacco crop is considered important in contributing to the effort to diversify into cash crops to promote rural employment and reduce poverty. Cigarette production in State-owned enterprises also contributes significant revenues to the Government budget. In 2000 the Vietnamese Prime Minister signed a resolution on tobacco control, which contains various measures that affect the supply of tobacco products and reduce demand, although enforcement and implementation of most of the components has, to date, been quite weak.

The premise for expanding the tobacco-growing area and improving the quality of tobacco and cigarette production methods is to discourage smuggled imports of cigarettes. However, once that domestic capacity has been developed it will create a strong incentive for the country's tobacco industry to maintain and even expand its domestic and export markets for cigarette consumption so as to increase profits.

The authors estimate current employment in Viet Nam's tobacco industry at 133 000 workers. About 100 000 tobacco workers are involved in cultivating tobacco, with only 10 000 working in cigarette production and 23 000 in distribution. Stricter enforcement of Viet Nam's tobacco control legislation would lead to reduced employment compared to current levels, but if delays in implementing legislation continue, tobacco cultivation and cigarette production will expand and future employment losses will be even greater. However, there are feasible alternatives to tobacco cultivation and cigarette production to meet the need for employment creation, poverty reduction and contributions to the State budget without promoting the supply side of the tobacco industry.

Overview of tobacco situation

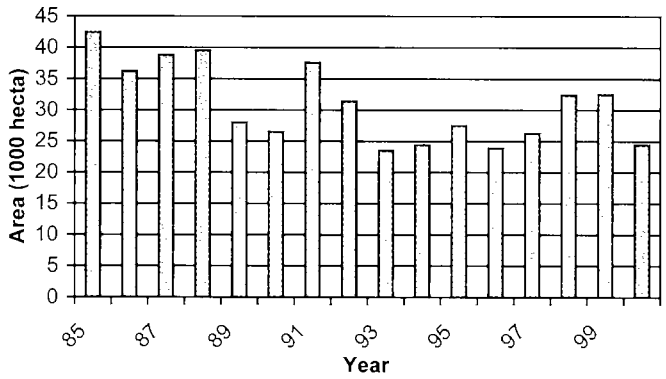
Tobacco leaf production

Area and output

Viet Nam has a tropical climate, which is very conductive to tobacco cultivation, though output is unstable. The type of tobacco grown in Viet Nam is not suitable for the higher quality cigarettes now being demanded by Vietnamese consumers. Many of the older tobacco species used in these blends such as Virginia, Burley and Oriental, which have been cultivated in Viet Nam for many years, have lost their pure flavours through cross-pollination. Because of this cross-pollination and poor cultivation techniques, these species also tend to

produce low yields of relatively low quality and cannot be exported or used domestically to produce high-quality cigarettes.

Figure 1. Tobacco cultivation area

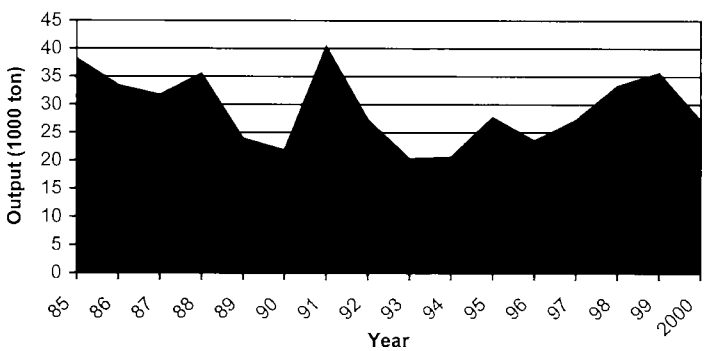


Source: GSO, Statistical Yearbook 1990-2000

The total area devoted to tobacco cultivation has fluctuated greatly over the past 15 years (Figure 1) with peaks in 1988, 1991, 1995 and 1999. The area planted in 1998 and 1999 was over 32 000 hectares, but in 2000 it dropped dramatically to only 24 400 hectares, a near 30% decline in one year. The drop is primarily attributed to the illegal import of cheap Chinese tobacco leaf, which makes it hard for domestically produced tobacco leaf to compete. The price of Chinese tobacco leaf in 2000 was only one-third to three-fourths the price of domestically cultivated tobacco leaf. (Ministry of Trade, 2002.)

The variation in the area planted with tobacco is reflected in similar fluctuations in tobacco output (Figure 2). Over the past 15 years, tobacco output has varied in the range of 20 000 to 40 000 tonnes per year, supplying 70–75% of the domestic demand for tobacco for cigarette production, the rest being supplied by imports. The quality of most tobacco leaf produced domestically is low and does not meet the standards required to produce international brand cigarettes such as Marlboro and 555.

Figure 2. Output of tobacco cultivation



Source: GSO, Statistical Yearbook 1990-2000

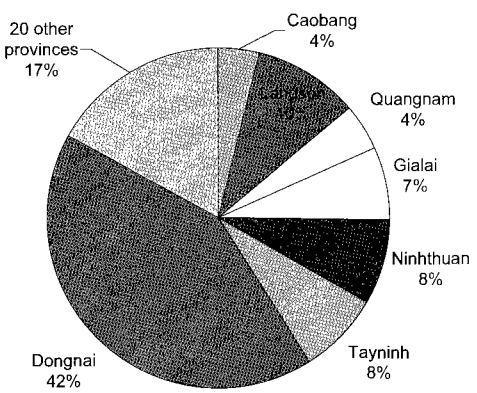
Output remains unstable for several reasons. First, most tobacco-growing regions have developed spontaneously, without a well-conceived plan. Thus, farmers are uncertain of the returns on their investment in tobacco. Second, the infrastructure needed for tobacco cultivation and processing is still underdeveloped. For example, in the north, where tobacco must be flue-cured, drying ovens are in short supply. Third, due to a shortage of investment capital and technical expertise, cultivation technology and methods remain backward. Finally, in order to meet the demand for higher-quality tobacco leaf, tobacco farmers need to plant improved strains of tobacco leaf, which are not commonly available.

Tobacco production also varies greatly by region (Figure 3). There are a total of 28 provinces cultivating tobacco leaf, both for use in the tobacco industry and for direct consumption (e.g. water pipe tobacco and self-rolled cigarettes). The area planted with tobacco in the south accounts for 80% of the total. This area is concentrated in Dong Nai, Ninh Thuan, Tay Ninh, Gia Lai, Quang Nam and Phu Yen provinces in the South, while in the North tobacco cultivation is concentrated in Lang Son, Cao Bang, and Bac Giang provinces.

Output in the South is over twice as high as in the North, primarily due to the much greater land area planted with tobacco. Yields are highest in Dong Thap, Ninh Thuan, TPHCM, Binh Dinh, and Da Nang. Dong Nai has the largest production primarily because it has the largest area planted with tobacco, but yields are not high.

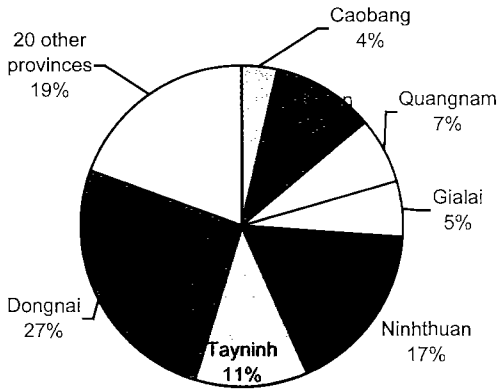
The decline in the area planted with tobacco seen between 1999 and 2000 (estimated figures) is not concentrated in one region, but throughout the country. Of the 27 provinces with some tobacco cultivation, only three provinces showed slight increases in planted area, and eight maintained the cultivation area between 1999 and 2000. Declines in planted area were seen in the remaining 16 provinces.

Figure 3a. Tobacco cultivation area by province



Source: GSO, Statistical Yearbook 2000

Figure 3b. Tobacco leaf output by province



Source: GSO, Statistical Yearbook 2000

Development of tobacco cultivation by the cigarette industry

In the past, inattention to domestic tobacco cultivation by the State-run cigarette companies led to unstable output and poor quality. In recent years, however, greater interest has been paid to domestic tobacco cultivation.

In 1999, the tobacco industry required some 45 000 tonnes of tobacco leaf for the manufacture of cigarettes with domestic production supplying 78% (Ministry of Industry). In 1998, Vinataba company supported local farmers to grow tobacco on a cultivation area of about 11 000 to 12 000 hectares (about 34 to 37% of the total national tobacco cultivation area). The Southern Cigarette Material Company owned by Vinataba presently helps farmers plant tobacco in 14 south-central and south-eastern provinces.

Both Vinataba, the primary State corporation producing tobacco products, and international tobacco companies have made efforts to expand area planted with tobacco and to improve the quality and yields of this tobacco. The Tobacco Research Institute, run by the Viet Nam National Tobacco Corporation, has worked to improve the quality and productivity of tobacco since 1987, but these efforts are still modest. Recently, the tobacco industry has established a plan to gradually increase domestic tobacco leaf production to 80 000 tonnes by the year 2010 through increased production area and improved yields. Vinataba is in charge of implementing this plan. The other cigarette companies purchase their tobacco inputs from the domestic and import market.

In the 1990s, R.J. Reynolds invested funds in the DaNang Cigarette Company to produce several of its cigarette brands and to improve tobacco cultivation in the central region, especially in Quang Nam province (1 000 hectares in 1998). By 2000, this joint venture no longer produced cigarettes, but continued to operate in the area of support for domestic tobacco leaf cultivation to supply the domestic and export markets. A joint venture between Vinataba and British American Tobacco (BAT) has just obtained the license to increase domestic tobacco cultivation and improve quality to fill in the gap currently being supplied by imports.

Cigarette production

The production of cigarettes comprises three main stages: processing the tobacco leaves, rolling cigarettes and packaging. Of these three stages, processing is of primary importance because it determines the quality of the product and is vital in achieving hygiene and safety standards. The quality of cigarettes is affected by the amount of tar in the particular type of tobacco leaf used, the age of the leaf at time of harvest, the adequacy of curing and storage, which prevents mildew. Quality can also be related to the manufacturing process and materials, including whether or not there are filters, adequate packaging, the standard number of cigarettes per package, fancy aluminium foil in the pack and other factors.

Tobacco leaf processing

The households that cultivate tobacco leaf primarily do the curing of tobacco in Viet Nam. Yellow tobacco is flue-cured in ovens at high temperatures over a period of a week. In the central and southern parts of the country both coal and wood are used to cure yellow tobacco. Brown tobacco, also grown in the central and southern parts of the country is usually sun-dried. The Southern tobacco processing facility belonging to Vinataba has a capacity of 7 000 tonnes of tobacco processed per year for domestic production and export, although the equipment is old and much processing must be done by hand.

Stemming, retrying, and other stages of tobacco fibre processing are normally done in factories. There are two companies specializing in tobacco-leaf processing, Nam Materials owned by Vinataba and a factory owned by Da Nang Tobacco Company, Ltd., which combined, process about 14 000 tonnes per year with a view to serving both domestic demand and exports.

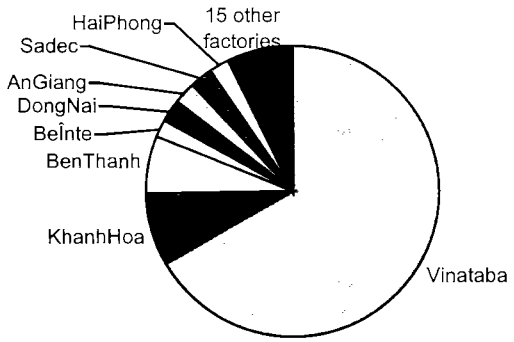
The Government has recently approved a production line to process 24 000 tonnes of tobacco leaf per year to replace the current 7 000-tonne capacity production line at the Southern Material Company to supply domestic demand. Seven of the domestic cigarette factories also have processing equipment for leaf processing, which are relatively complete, including Thang Long, Thanh Hoa, Khanh Hoa, Dong Nai, Saigon, Vinh Hoi, and Ben Tre. Two factories, Bac Son and Cuu Long, have incomplete systems. The 19 remaining facilities have very primitive or obsolete leaf-processing equipment and facilities that are cramped and damp rendering them unqualified to meet quality or hygiene and safety standards for consumers. In the future it is likely that companies without proper processing facilities will start to purchase production materials from the specialized tobacco-processing companies, thus increasing the demand for their output and improving the quality of their own cigarettes.

Manufacture of cigarettes

The total capacity of the tobacco industry in Viet Nam is about 3 thousand million packs per year, of which filter cigarettes account for 2.2 thousand million packs. This total capacity is fixed and Government tobacco control regulations do not allow it to be increased. Actual production in 2000 was reported by the industry as 2.6 thousand million packs per year. There are 28 factories currently involved in cigarette production. Figure 4 shows the structure of production. In 1999 Vinataba accounted for 64% of production and 60% of industry revenues with its five factories. There are twelve enterprises managed by the provinces or districts, two joint ventures with foreign companies, six enterprises under local Communist party control, two companies under other ministries and one joint stock

enterprise. There is one new factory in the Central region, which had not yet begun production by 2000.

Figure 4. Cigarette production by factories

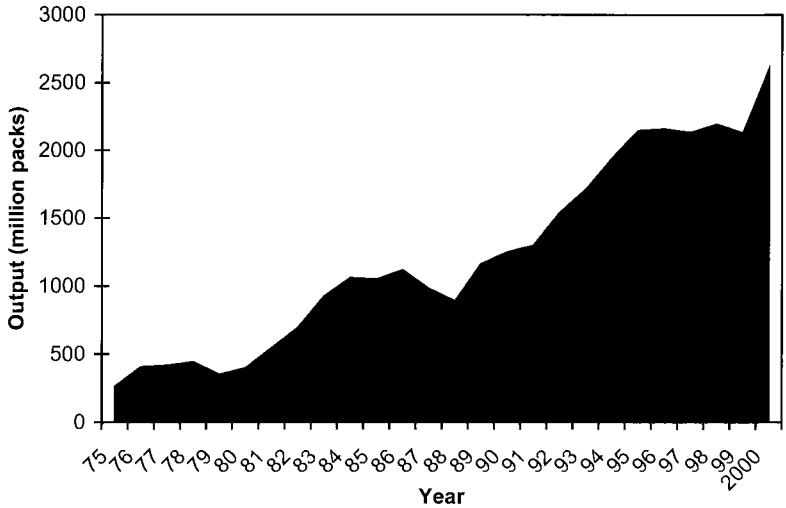


Source: Ministry of Industry

Most production is located in the southern and central provinces, closer to the source of domestic raw materials. While all companies are ostensibly State-owned, many of them rely on private capital to finance their activities in the form of renting equipment from private individuals, or sub-contracting packaging of their products to private or household enterprises. There is currently one equitized company and several of the others have plans to be equitized (i.e. converted from a State-owned enterprise to a stock company). By the end of the first half of 1999, seven of the twenty-eight companies producing cigarettes reported losses. Six of these had reported suffering losses in 1997 and 1998 as well.

Several Vietnamese tobacco companies have obtained foreign investment. Officially there are two joint ventures: Danang Tobacco Company Ltd. has signed a joint venture with R.J. Reynolds to produce Salem, More and Camel brands and Vinasa Indonesia has a joint venture with Can Tho Cigarette factory to produce the Golden Eagles, Rave and 234 brands. In 2000, the foreign partner of the DaNang joint venture sold its brands to Japan Tobacco and they have stopped production of manufactured cigarettes though they continue to provide technical assistance to cultivation and to process tobacco leaf. Three of the Vinataba factories have production agreements with foreign companies: Saigon cigarette factory has received investments from BAT to produce 555, Thang Long cigarette factory has investments with Rothmans to produce Dunhill and Vinh Hoi cigarette factory has a joint venture with Phillip Morris to produce Marlboro cigarettes. In addition, some domestic tobacco factories make foreign brand cigarettes under license of the foreign brand name holder and usually use foreign equipment such as Craven A and Everest. In 1999 there were 245 brands produced locally.

Figure 5. Cigarette production



Source: GSO, Statistical Yearbook 2000

Despite an unstable output of domestic leaf tobacco over the past few years, cigarette production in Viet Nam is on the rise (Figure 5). Output has increased from 1 164 million packs in 1989 to 2 129 million packs in 1999. This is an average increase of 6% per year, which is much faster than population growth at only 1.7%. In 1989, 18 packs of cigarettes were produced per capita, while in 1999 this figure rose to 28. Note that the output figure for 2000 shows a sudden increase in production. In 2000 the Government began implementing a policy of using stamps on domestically produced tobacco products to more easily catch smuggled cigarettes in the market. This policy also forced the industry to report more accurately their production levels, whereas in the past many of them probably underreported output to avoid making contributions to the national budget.

Expansion in production has not been uniform across the industry. Between 1997 and 1998, output in four of Vinataba's factories, Ben Tre Cigarette factory, Khanh Hoa Cigarette enterprise, and Vinasa declined. Production in Vinataba's Vinh Hoi Cigarette factory increased as did production in all the remaining local and other cigarette production facilities. The Government and Ministry of Industry have become more lax in their control of imports of equipment and materials, thus encouraging domestic cigarette producers to improve production technology and expand raw material growing areas. In the short run they have given permission to import raw materials needed to improve cigarette quality to satisfy domestic demand for high-quality cigarettes at a reasonable price.

All Vietnamese cigarette companies have cigarette rolling machines, but of differing quality and vintage. Currently, in the entire industry there are 103 filtered cigarette-rolling machines and 57 for unfiltered cigarettes. Most of the machines were used previously in other countries before being imported for use in Viet Nam. There is one mechanical company under Vinataba, which is involved in installation, repair, maintenance and production of machinery for cigarette production.

Until now, the Vietnamese tobacco industry's declared strategy has been to produce to satisfy domestic demand and increase production only to substitute for smuggled imports. With a cap on total domestic capacity for cigarette production, the potential for increasing profits lies primarily in increasing quality, consumer appeal and value added rather than expanding output beyond the 3 thousand million-pack limits.

Paper and packaging

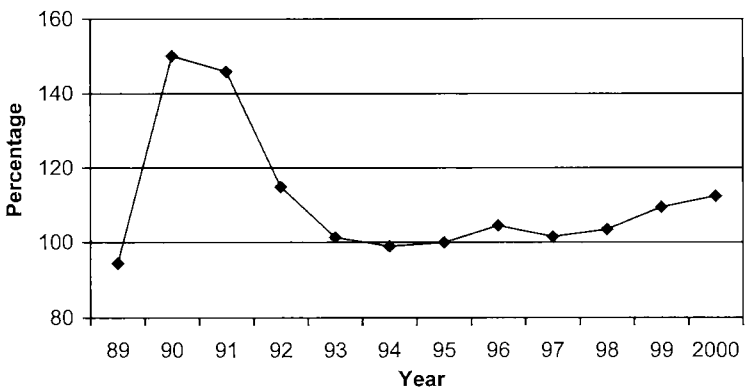
Until 1993, all cigarette paper, foil, plastic packaging, chemical aromas, and other packaging for high-quality cigarettes were imported. Currently Viet Nam produces some materials domestically including filters, packs, and gold paper, foil and tear strips. However, imported packaging materials still account for a large share of all materials. Materials are imported from China, Germany, Hong Kong Special Administrative Region of China and the United Kingdom. The value of these materials imported increased between 1997 and 1998.

In the larger cigarette factories, modern equipment is used to package cigarettes in cardboard boxes. The smaller facilities use more labour-intensive methods for packaging cigarettes, which adversely affect productivity and quality, but lead to greater employment.

Consumption

Tobacco consumption in Viet Nam consists of both manufactured cigarettes and cruder forms such as water pipe tobacco and self-rolled cigars. In recent years as consumer incomes have risen, demand for foreign-style, higher-quality cigarettes has also increased. This trend has been accelerated by the introduction of foreign-produced cigarettes, both domestically produced and illegally imported, and the intensive advertising campaigns waged by the transnational tobacco corporations. Taste preferences have shifted from the flavours found in domestic cigarettes to those found in English or American blends.

Figure 6. Real price of cigarettes



Source: General Statistical Office

Prices

The price of a pack of cigarettes varies greatly by brand. In 2001 the prices ranged from about 1 000 Vietnamese Dong (about SUS .07) per pack for products of smaller

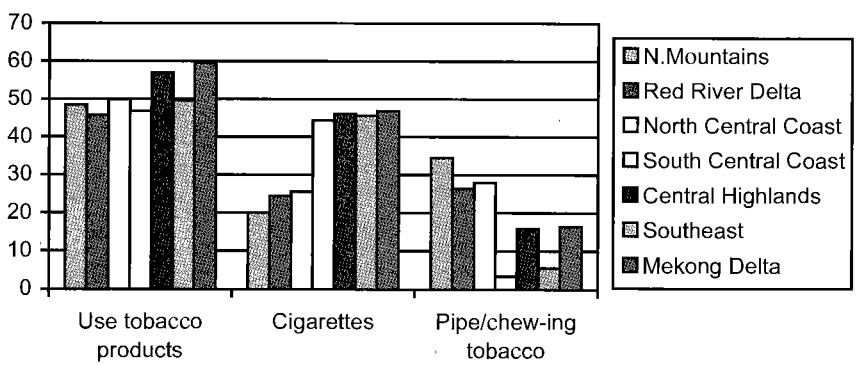
factories up to 12 000 Vietnamese Dong ($US .80) per pack of domestically produced 555. Smuggled imports of 555 or Marlboro can fetch slightly higher prices because consumers consider them to be of higher quality or more refined. For comparison, a kilogram of rice costs about 2 500 Vietnamese Dong and minimum wages are about 6 000 Vietnamese Dong per day.

The price of cigarettes in general declined during the early 1990s and increased slightly toward the end of the 1990s (Figure 6). Since 1995, real cigarette prices have increased 12% compared to 17% for the general price level in Viet Nam as measured by the consumer price index over the same period of time. Thus the relative price of cigarettes has declined compared to other goods in the economy, which creates incentives for increased consumption.

Consumption

Data from the 1998 Living Standards Survey show that approximately 12 million men and approximately 900 000 women in Viet Nam smoke. Average consumption of male and female smokers respectively was 11.3 and 10.7 cigarettes per day. This yields an estimate of consumption at approximately 1.83 thousand million packs of cigarettes or a value of 5.8 million Vietnamese Dong in 1998. In 1993 consumption was estimated at 2.14 thousand million packs. This suggests a decline in consumption of 3% per year or a total number of packs of 310 million between 1993 and 1998. However, it is puzzling that consumption in 1992 was greater than production by almost 430 million packs, while in 1998, consumption was less than production by 365 million packs yet estimates of smuggling are still around 200 to 300 million packs. The National Health Survey 2001–2002 provides more up-to-date estimates of tobacco consumption for a larger sample than the Living Standards Survey, which will hopefully clear up this discrepancy.

Figure 7. Male smoking rates by region (%)



Source: Vietnam Living Standard Survey 1997-1998

The types of tobacco products the population consumes have been changing over time with a stronger decline in manufactured cigarette production than other forms of tobacco consumption. In 1993, the Living Standards Survey showed that 44% of men smoked manufactured cigarettes, 21% used only other forms of tobacco and 2% used both cigarettes and other forms of tobacco. By 1998, the proportion smoking cigarettes had decreased to

36% while the proportion using other forms of tobacco declined to 18% and the proportion using both increased to 4%.

There are clear regional differences in consumption patterns (Figure 7). In the north, only 46% of smokers smoke cigarettes while 63% use other forms of tobacco (pipe, chewing, self-rolled). In the south, 82% smoke manufactured cigarettes while only 22% use other forms of tobacco. If one considers the Vinataba brand with a price of 6000 Vietnamese Dong as the low end of higher-quality cigarettes then in 1998 higher quality brands represented only 12.5% of consumption. This varied greatly from 2.3% in the North Central Coast to 33% in the Southeast.

If we examine smoking patterns across income groups we also find distinct differences. Among the poorest 20% of the population only 46% of smokers smoke manufactured cigarettes and this share increases steadily with income groups up to the richest 20%, where 88% of smokers smoke cigarettes. The share smoking expensive brands also increases gradually from 2% to 66% as income increases.

Even if the prevalence of smoking does not increase or actually declines, the demand for manufactured cigarettes, especially for higher-quality brands may increase as income rises and people switch from non-manufactured tobacco products to cigarettes, and switch from lower-quality brands to the higher-quality ones.

National consumption of cigarettes is positively affected by population growth, income growth, low prices and easy accessibility through widespread distribution networks, all four conditions of which are currently relevant. National consumption will be negatively affected by aspects of the National Tobacco Control programme, which attempt to lower demand through health warnings on packaging, health education and programmes to assist in quitting, limited sales to minors, severely limited advertising and increased taxes on cigarettes. Strong enforcement of the policy will be required to counteract the conditions, which are encouraging consumption of cigarettes.

Trade

Imports and exports of materials

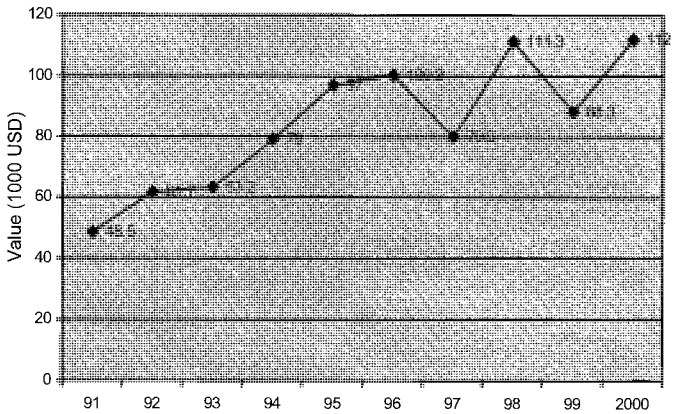
Viet Nam is currently both an importer and exporter of tobacco leaves, and primarily an importer of various other inputs into the tobacco industry such as special papers and aromas added to tobacco to make cigarettes.

High-quality cigarette brands with filters tend to be produced using tobacco grown and processed abroad. Several types of cigarettes are produced with imported tobacco leaves processed domestically. The lower-quality cigarettes rely primarily on domestic supply of tobacco leaf or illegal imports of tobacco from China. Recent efforts to increase use of domestic raw materials to replace imported materials for the production of high-quality and foreign-brand cigarettes have not yet yielded results and demand for these products continues to grow so Viet Nam still relies primarily on imports for production materials in these products.

The value of official imports has fluctuated greatly from year to year as seen in Figure 8, but there has been a general rising trend in the value of tobacco materials (including both raw tobacco and other inputs to cigarette production) imported over the past decade.

Officially, some 10 000 tonnes or 25–30% of tobacco leaf used in annual production of cigarettes in Viet Nam comes from imports. The main sources of imported material are China, Singapore, Malaysia, and the United Kingdom. The value of tobacco and other cigarette production materials imported officially in the year 1998 was estimated at US$ 111 million, which was less than 1% of the value of all imports, but equivalent to 34% of the total reported revenues of the tobacco industry in 1998.

Figure 8. Import Tobacco Materials



Source: Ministry of Trade; GSO, Statistical Yearbook 1994-2000

Illegal import of leaf tobacco for production comes primarily from China and Cambodia. In the first half of 1999, loss of other markets put pressure on China to export to Viet Nam. It is estimated that 10 000 tonnes of tobacco leaf were imported from China in this year (this figure is not included in total demand for tobacco leaf of 45 000 tonnes). This led to a surplus of the more expensive domestically produced tobacco leaf. Inability to sell domestic tobacco leaf in the market may be one of the reasons for the big drop in estimated area and output of the domestic tobacco leaf production in 2000. The problem of illegal imports of tobacco leaf is thus hampering the development of domestic tobacco cultivation and limiting income of farmers who grow tobacco in Viet Nam. To alleviate this problem, the Government has put in place a plan to increase domestic production of tobacco leaf and improve its quality as mentioned above and to increase vigilance of the border controls for smuggling.

Two companies involved in tobacco-leaf processing, Da Nang Tobacco Company and Vinataba's Southern Materials Company now export tobacco leaf. In 1999 the value of their exports was about US$ 4 million. However, the value of imports cigarette production contributes is 31 times the value of tobacco leaf exported.

Imports and exports of cigarettes

It is illegal to import manufactured cigarettes into Viet Nam although international travellers are allowed to bring in one carton in their luggage as they enter the country. Nevertheless, there is a high demand for smuggled cigarettes as some brands are perceived to be of better quality and other smuggled brands are cheaper than similar quality domestically produced brands. The Government has estimated that illegal cigarette imports amount to some 200 to 300 million packs per year or a value of US$ 66.7 million (Labour newspaper,

10 April 1999 pg. 1) The Government is very concerned about the lost employment and lost Government budget revenues resulting from smuggling of cigarettes.

Local production of foreign brands under license was set up ostensibly to substitute for imports and possibly with the hope that some output would eventually be exported. In 1998 Viet Nam's cigarette exports were negligible. Many companies have plans for exports, but it is not clear whether they have managed to export their products or not. Vinasa is currently producing cigarettes for export 18 million packs. Nghe An factory had a plan for 2000 to export 14.7 million packs. By 2010, the Vietnamese tobacco industry plans to have exports of one million packs per year of international quality, only a miniscule share of total output.

Cigarette distribution

Currently, the cigarette manufacturers' agents primarily organize the wholesale distribution network for cigarettes. In 1997 there were 1 000 large and small wholesale agents distributing cigarettes in the domestic market. From 85–90% of these distributors were household private enterprises and some were agents for from five to six different cigarette manufacturers. Frequent newspaper articles point out the problem of distributors selling fake and smuggled cigarettes[1]. Some distributors work at a wholesale level and a large share of their revenues comes from tobacco.

Some retailers specialize in selling cigarettes, but most tobacco product retailers also sell many other product lines so that tobacco accounts for a small share of their sales revenues. Because of the addictive properties of tobacco, the product's sales tend to be quite regular and hence attractive to distributors because it provides stable income. In 1999, a new regulation was promulgated to attempt to put some order into cigarette sales to limit sales of smuggled and fake items. However, the market is still not closely supervised and estimates of the total number of people involved in cigarette distribution is unknown. Profits from the sale of one pack of cigarettes vary from about 0.5% to 20% depending on the brand and location. Better quality cigarettes and foreign (smuggled) cigarettes yield higher profits to distributors so there are incentives to sell those brands.

Advertising and marketing

Since 1995, Viet Nam has prohibited cigarette advertising in almost any form including television, radio, newspaper, magazines, billboards, and signs and sports events. The National Tobacco Control Policy passed in 2000 has further banned any direct or indirect forms of advertising of cigarettes that had not been explicitly laid out in the 1995 regulation. Among all tobacco control measures, this policy has been most strictly enforced. Nevertheless, the market control force is unable to keep up with the large number of cafes and restaurants that continue to display tobacco posters, ashtrays and other items printed with tobacco industry logos. Domestic cigarette manufacturers are very supportive of these strict advertisement prohibitions as they find it difficult to compete with foreign brands.

[1] Distributors of cigarettes in HCMC. *Labour Newspaper*, 19 January 2000, p. 3 & A look at 4 months of tobacco smuggling control. *Labour Newspaper*, 25 September 1999.

Tobacco control policy in Viet Nam

In 2000, the Vietnamese Government passed a comprehensive tobacco control policy. The policy includes components that were already being implemented such as advertising bans, but also included policies that will be implemented in the near future. Policies can be divided into those that attempt to reduce demand for tobacco products, and those that reduce supply.

Policies to reduce demand for tobacco products

Health education (information, education and communication)

An information, education and communication strategy for reducing the demand for tobacco products is currently being developed. This strategy should ensure that the whole population is provided with relevant and reliable information about tobacco as related to health hazards, financial consequences, legal aspects and social norms. Information, education and communication activities, the cultural village and family movement at the community level will be promoted, especially among the youth via education activities at school. Medical professionals will be adequately trained and instructed to provide all patients and their relatives with relevant information about health hazards and the ill effects of tobacco smoke on health as well as methods for smoking cessation.

Strict control over advertising, sales promotion and sponsorship of different types

All forms of both direct and indirect tobacco product advertising, including the use of brands of tobacco products, trademarks and logos on non-tobacco products and services have been banned since 2000. The organization of marketing activities is strictly prohibited, including the use of the marketing staff system for sales promotion and printing of trademarks or labels on vehicles. The Trade Law, which prohibits commercially initiated free distribution of cigarettes and similar marketing methods of tobacco products to children under 16 will be strictly enforced. Domestic organizations are banned from receiving sponsorship from tobacco companies for cultural, art and sport events for tobacco advertising purposes.

Health warnings

Health warnings have been required for many years on cigarettes sold in Viet Nam. However, only recently was it required that the warnings be written in Vietnamese. The current tobacco control policy passed in 2000 makes it obligatory that health warnings be visibly and clearly printed on all packs of tobacco products. The health warnings must be impressive, highly visible and carry a strong, brief message. In the near future, warnings will be required to show the hazardous contents (especially nicotine and tar) on every pack of cigarettes.

Taxes and prices of tobacco products

Because tobacco is a type of harmful good whose consumption must be discouraged, taxes are to be imposed on tobacco products at a high level. The Vietnamese Committee on Smoking and Health in collaboration with the Economics Institute is currently researching an appropriate price and tax level for cigarettes to recommend to the Government.

Smoking cessation support

Smoking cessation methods will be encouraged, organized and supported, and new methods appropriate to the Vietnamese context will be explored. Training for health staff on different suitable and cost-effective methods of smoking cessation for every target group will be provided. The role of every individual, family, community and society in encouraging smokers to give up smoking will be promoted.

Smoke-free areas

Since 1989, the Law on Protection of the People's Health has banned smoking at meetings, offices, health facilities, schools, kindergartens, cinemas, theatres, on public transport means and other crowded places. People are to be encouraged not to smoke at social festivities, weddings and funerals.

Policies to reduce supply of tobacco products

Strict control over tobacco production

The Government will maintain its monopoly on cigarette production. Only public enterprises and licensed joint ventures operating under conditions meeting Government regulations are allowed to produce tobacco products. Enterprises are not allowed to expand their investment or make new investments to exceed the present level of total cigarette production capacity (currently at 3 thousand million packs per year). New projects on cooperation, production or joint ventures with foreign countries in producing cigarettes are no longer allowed and no additional foreign brand cigarettes are to be produced. However BAT has recently been approved in a joint venture to promote domestic cultivation of higher-quality tobacco to substitute for imported tobacco leaves. Vietnamese standards of tobacco quality must be met. The nicotine and tar levels in Vietnamese cigarettes must be gradually reduced to those now applied in developed countries. Strict controls will be done on the printing of cigarette trademarks and packages to prevent the production of fake cigarettes or fake cigarette brands. Workers in the tobacco industry must be guaranteed a hygienic work environment according to regulations.

Control of cigarette trading

Tobacco is a type of goods for which trading is limited in accordance with the regulation of the Government decree 11/1999/ND-CP of 3 March 1999. The Government will control the circulation and consumption of cigarettes on the market, gradually controlling a monopoly in wholesale trade and strictly controlling the tobacco product retail trade. Sale of tobacco products to people under age 18 is banned. Strict measures to prevent and address the production and consumption of fake tobacco products and faked cigarette brands are to be implemented.

Banning tobacco importation

The Government will maintain its policy to ban the importation and circulation of foreign cigarettes in the market of Viet Nam according to the 278/CT Instruction by the Prime Minister dated 3 August 1990.

Controlling smuggling of tobacco products

Inspections will be intensified and violations strictly addressed, including confiscating smuggled cigarettes, vehicles and other equipment used to smuggle cigarettes, fining and even incarcerating smugglers. A movement in which the whole population is engaged in preventing smuggling, transporting, sales and consumption of smuggled cigarettes will be developed. Rewards will be given to promote the movement to prevent smuggling and sales of smuggled cigarettes. Economic solutions will be strengthened to create jobs with sustainable income for people living on border areas so that they volunteer not to get involved in transporting and lending a hand to cigarette smuggling through the borders.

Enforcement of the tobacco control policy

The tobacco control policy involves many different components and agencies. Some elements of the policy are being strictly enforced such as bans on advertising of cigarettes and bans on importation of cigarettes through legal importation channels. However, many other components are only now being launched (for example, Information, Education, Communication (IEC), health warnings on labels and smoking cessation assistance) and others are poorly enforced (smoke-free areas and smuggling prevention).

Tobacco industry employment: review of literature

There is little written on employment in the tobacco industry in Viet Nam. Some reports from the Ministry of Industry include the truism that the tobacco and cigarette industry can create employment and contribute to the national budget. Several news articles discuss the smuggling issue. One article discussed employment opportunities at BAT.

Tobacco industry employment in the realm of national employment

Estimates of tobacco-related employment

Little is currently known about the employment generated by the tobacco industry or its potential to generate employment and income in agriculture, industry or sales. This section will make rough estimates of tobacco-related employment.

Agriculture

Labour

There are no official statistics on the number of households or workers involved in tobacco cultivation or their distribution across regions. The 1999 Tobacco Industry Report from the Ministry of Industry estimates that 150 000 people work in tobacco cultivation or simple post-harvest processing. This amounts to less than half a percent of the total rural agricultural labour force. One can calculate this in terms of equivalent full-time workers by

multiplying by the percent of a 40-hour work week worked by the rural labour force on average (73.28%) to get 109 920 full-time equivalent jobs. This figure is underestimates total agricultural employment since it includes only larger-scale tobacco farmers supplying the cigarette industry.

The Viet Nam Living Standards Survey (VLSS) allows us an alternative method for calculating total full-time equivalent jobs in tobacco cultivation, including also the smaller-scale farmers and those only growing pipe tobacco. The calculation basically estimates the share of land planted in tobacco out of all cultivated land for households cultivating tobacco and multiplies it by the total hours worked in cultivation in the past 12 months for those households then multiplies by the sampling weights to get a population figure. The VLSS showed that 2.42% of all households were involved in tobacco cultivation (some 400 000 households). Of these households, 75% used less than 25% of their agricultural land for tobacco production. No households used more than two-thirds of their agricultural land for tobacco production. On average a household involved in tobacco cultivation is estimated to work 662.4 hours per year. If we assume a full-time working year is 50 weeks times 40 hours per week (2 000 hours), we would estimate 136 000 full-time equivalent workers in tobacco cultivation. This suggests that many households supplement their incomes with tobacco cultivation, but it is rarely the main source of income as will be seen in the next section on incomes.

If information can be obtained on labour norms per hectare or labour norms per tonne of output, a third estimation method would be to multiply these labour norm coefficients by the total area planted with tobacco or the total output of tobacco leaf. So far these figures have not been found for Viet Nam. In any case, with dramatic fluctuations in area and output over time, employment in tobacco cultivation is unlikely to be very stable. It is likely as an area expands or declines, the number of households and household labour involved will increase or decrease proportionally since tobacco is not traditionally planted on plantations.

The regional distribution of agricultural employment in the tobacco industry is likely to be proportional to the distribution of land area or output or somewhere in the middle. Thus, a majority of agricultural employment in tobacco growing would be in the south, concentrated especially in the provinces of Dong Nai, Tay Ninh, Ninh Thuan, Gia Lai and Quang Nam in the south and Lang Son and Cao Bang in the north.

Most employment related to tobacco growing would be created for unskilled agricultural labour in households. Nevertheless, there would also be an obvious need for technical assistance from trained agricultural extension workers. A 1995 R.J. Reynolds study estimated that for every 15 to 25 hectares, one technical worker would be required. Given the area planted in tobacco in 1999 and 2000, one would need to have from 975 to 1 625 agricultural extension workers. However, given that the current agricultural extension system is understaffed, and an agricultural extension worker would work on more than one crop at a time, it is unlikely that the number is as high as this estimate.

Major inputs into cultivation of tobacco include fertilizer and pesticides. Some of these are imported, while others are domestically produced. For example, in a study done of tobacco growing in Da Nang, for every hectare of tobacco planted in 1995, the value of pesticides and fertilizer used was 4.3 million Vietnamese Dong (US$ 280)[2]. It is not clear what share of these chemicals is domestically produced or how much labour was used to

[2] Da Nang Tobacco Factory. Plan for production of tobacco during the main growing season 1995-1996.

produce this amount. However, if the land were not utilized to produce tobacco, it would probably be used to plant some other crop, which would also require pesticides and fertilizer. Therefore, it is unlikely that changes in the area planted in tobacco would have a significant impact on employment in agricultural chemical industries in Viet Nam.

Incomes

R.J. Reynolds conducted a study to examine the costs of production of different types of tobacco on land in Quang Nam province. Average profits were around 21 to 31% of revenues. If data is taken on revenues from the VLSS and multiplied by the share of revenues as profit, a rough profit and profit per hectare estimate can be calculated. In 1997–1998 income earned from tobacco for households cultivating tobacco was 222 000 Vietnamese Dong (some US$ 15), which accounted for an average of only 3% of agricultural income of tobacco-growing households. On average per hectare, the profits calculated from the VLSS would be 3.6 million VND. An R.J. Reynolds study on expanding tobacco-growing area in Quang Nam compared estimates of profits from alternative crops. They showed that tobacco was the most profitable compared to corn, peanuts, rice and manioc. It is likely that the study overestimates profits from tobacco as this study was written to encourage farmers to plant tobacco. Other crops besides tobacco and the crops mentioned in that study could be planted on this same land and it is unclear what their profits would be. The profit estimates are also likely to be different for growing conditions in other provinces.

Processing

Tobacco processing has several stages. The first stage, curing of tobacco, in most cases is done directly by households or groups of households involved in tobacco cultivation. A research mission to Soc Son district tobacco planting households estimated that 20 working days are needed for tobacco curing per hectare planted, including the time spent gathering fuel. If this amount of time is the same throughout the country, with a total area of 32 500 hectares planted in 1999 and 24 400 hectares planted in 2000, one could estimate the total number of full-time equivalent workers would be 1 876 to 2 738.

The major input into curing of tobacco is fuel, primarily coal or firewood. For every hectare of tobacco output, 5.25 tonnes of coal and 21 cubic metres of firewood are needed. The gathering of fuel wood was included in the estimate of labour requirements for processing. The production of coal for tobacco curing would therefore require from 920 to 1 220 workers in 1999 or 2000 respectively. A 1999 newspaper article on southern coal markets noted that because the Southern Materials Company used firewood, the southern coal markets were suffering, suggesting the importance of tobacco curing as a market for the coal industry.

In addition, for curing of tobacco, ovens would have to be built. This would take a workforce for the initial construction, and later for maintenance or rebuilding. It is not clear how much labour would be required for this.

No information was available on the number of workers in Vinataba's Southern and Northern materials companies. In most cigarette factories, employment in processing is combined with employment in cigarette manufacturing.

Manufacturing

In 1999, there were approximately 10 000 regular and seasonal workers in cigarette production and packaging. The largest concentration of cigarette manufacturing workers is in the Southeast accounting for 44% of which HCMC contributes close to 80%. The Red River Delta contributes another 18%, the North Central Coast 15% and the South Central Coast and Mekong Delta each about 10%.

While no precise figures are available, industry reports suggest that the smaller factories producing lower quality cigarettes are more labour intensive than the larger factories, especially in the packaging phase of production. Rough estimates from these reports show output per worker on average of about 214 000 packs per worker. This varies considerably. The Saigon cigarette factory produces generally higher-quality cigarettes, with productivity of 477 000 packs per worker and Nghe An produces generally low-quality products, with productivity at only 32 000 packs per worker. In 1999, 17 of the 28 factories had 200 or fewer workers. Only three factories, all owned by Vinataba, had more than 1 000 workers.

The Ministry of Industry has plans to consolidate these companies into two or three National Corporations with a view to gaining better control over this industry so as to guarantee better quality and reduce tax evasion. The decision to restructure the industry was made prior to the tobacco control policy decision although the policy of a State monopoly on cigarette production is included in the overall policy.

In the restructuring plan some factories may close down because the quality of their output is poor and they are suffering losses. Several of the enterprises for which cigarettes are only one of their many products will be asked to move into other product lines and to stop cigarette manufacturing. By 2000, DaNang cigarette factory had basically ceased producing cigarettes and is now concentrating on expanding growing area and processing raw materials. The industry restructuring will have some impact on local labour markets. This is especially so as most of the factories to be closed down are in areas where labour markets are weak and absorption of the workers into the local economy will be difficult even though the share of all workers in the industry to be affected is low.

In general, workers' income in cigarette factories is high relative to the average worker income in the same localities. Some of the larger local factories have technical staff who are paid skilled worker salaries and have high productivity, but the smaller facilities tend to use only unskilled labour and sign seasonal contracts while paying wages in a lump sum, not linking wages to quality of output.

Working conditions in the larger factories are fine and little occupational illness was found after health checks. However, working conditions in the smaller factories are poor with much tobacco dust, little air circulation, and lack of light and protective clothing.

Trade and distribution

Currently, illegal imports of cigarettes are a major source of income for many poor people, especially during the flood season in the Mekong Delta when people are unable to cultivate the land, waterways are wider making borders more porous and enforcement weaker. No estimates are available on the total labour involved in illegal imports but with illegal imports of around 200 million packs per year, it is likely that a large number of people are involved, many of them poor.

Reports from the Ministry of Industry estimate that there are approximately 1 000 households and small companies involved in wholesale distribution of cigarettes. With estimated profits of about 3% of total value of cigarettes sold, we can estimate retail employment by taking total value of domestic output times 3% profits and dividing by the average income of a State worker per year. This gives us approximately 23 000 full-time equivalent workers in retail cigarette sales. Note, however, that few retailers specialize in selling cigarettes. In most cases, sales of cigarettes account for only a small share of the merchandise sold by retailers.

Enforcement of tobacco control policy

The implementation of the tobacco control policy in Viet Nam will potentially create some employment in IEC against tobacco, tobacco cessation counselling and market and smuggling control work. Poor enforcement will lead to eventually greater employment in the health sector to deal with the health consequences in the long term. Estimating employment in these areas is difficult.

The tobacco industry in relation to the national picture

In section (a) above, estimates of total full-time equivalent employment in the tobacco industry ranged from 148 000 to 176 000. The largest share is taken up by agricultural employment ranging from 74–78%. This is followed by retail sales at approximately 13–16%. Cigarette manufacturing accounts for 6–7% of total employment related to the tobacco industry.

Tobacco-related employment accounts for only about 0.5% of national labour in cultivation, 0.3% of manufacturing employment, 1–2% of total employment in coal production and about 1% in retail sales. Households account for 90–92% of tobacco-related employment, with less than 10% in State-owned enterprises.

Regional employment for agriculture is assumed to be proportional to land area, for distribution it is assumed proportional to consumption of cigarettes and for manufacturing it is based on location of factories. Other minor employment is difficult to estimate across regions, but accounts for less than 10% of all employment. The Southeast accounts for half of all tobacco-related employment. The Northern mountains account for close to 20%, primarily agricultural employment. The South Central Coast has about 10% of all tobacco-related employment.

The total value of industrial output contributed by the tobacco industry in 1999 was 5%. Tobacco is almost exclusively State produced, accounting for close to 8% of the value of State-owned sector manufacturing output. Output of centrally managed factories accounted for 58% of the total.

The area planted in tobacco in Viet Nam is relatively small. In 1999, tobacco accounted for only 3.7% of annual industrial crop land, but only 0.26% of total agricultural land area.

Trends in tobacco industry employment

If employment in cultivation of tobacco is proportional to area planted in tobacco, then the tobacco industry employs a widely fluctuating amount of agricultural labour from

year to year. In 2000 a strong decline was seen in land area and output of tobacco and probably a strong decline in the number of households involved in tobacco cultivation. Whether this trend will continue is hard to say. Dumping of Chinese tobacco leaf is the main reason given for this strong decline in tobacco cultivation. National plans for increasing the area planted and yields as well as for improving the quality of tobacco leaf produced domestically combined with the recent signing of a joint venture between BAT and Vinataba for tobacco cultivation are likely to increase employment in tobacco cultivation in the near future. They are also likely to increase the value of output produced by farmers while reducing dependence on imported tobacco leaf.

As mentioned above, about 10 000 tonnes of tobacco leaf are currently officially imported as inputs to the cigarette industry every year and perhaps another 10 000 tonnes are imported illegally. If the increase in agricultural employment in tobacco cultivation is proportional to output and if domestic output completely replaces imports (20 000 tonnes per year) we could expect to see an increase in agricultural employment of 80 000 full-time equivalent farm jobs.

With an expected increase in tobacco cultivation it is likely that domestic processing of tobacco leaf will also increase. Already, the Da Nang Tobacco Company has switched from the manufacture of cigarettes to domestic cultivation and processing of domestic and imported tobacco leaf. They supply both domestic cigarette manufacturers and the export market.

The real value of tobacco industry output increased at an annual rate of 6.8% from 1995 to 2000, however growth has not been steady. From 1997 to 1998, the value of tobacco output grew by 10%, but from 1998 to 1999 it dropped by 2%, then from 1999 to 2000 increased by 16%. Employment in cigarette manufacturing is unlikely to grow significantly for several reasons. There is a Government-imposed cap on overall capacity in the industry of 3 thousand million packs per year. Industry is now producing 2.6 thousand million packs a year. The product mix is moving towards higher-quality products as the national income increases. Higher-quality products require more capital-intensive production methods, so hand-rolling and hand packaging are likely to decline, leading to declines in employment. Current and planned exports of manufactured cigarettes are quite low.

Tobacco control policies and industry employment

Input-output analysis to evaluate tobacco control impact on employment

The impact of tobacco control policies on employment can be evaluated qualitatively based on the structure of the country's or region's tobacco economy. Whether a country or region is a tobacco-leaf producer, a cigarette manufacturer or both significantly determines how tobacco control policies affect national or regional employment. Viet Nam currently produces much of the tobacco leaf and most of the cigarettes consumed locally although it imports a significant amount of tobacco leaf, and about one-tenth of all manufactured cigarettes consumed are smuggled into Viet Nam. Exports of tobacco leaf and cigarettes are negligible. In this situation, reductions in tobacco consumption through the tobacco control policy are likely to have an important impact on employment through structural adjustment and losses in tobacco-related jobs in agriculture, manufacturing and distribution, although declines in consumption will also have an impact on imports. Whether the impact is positive

or negative depends on the number of jobs lost and gained as a result of consumers switching their spending from tobacco products to other goods and services.

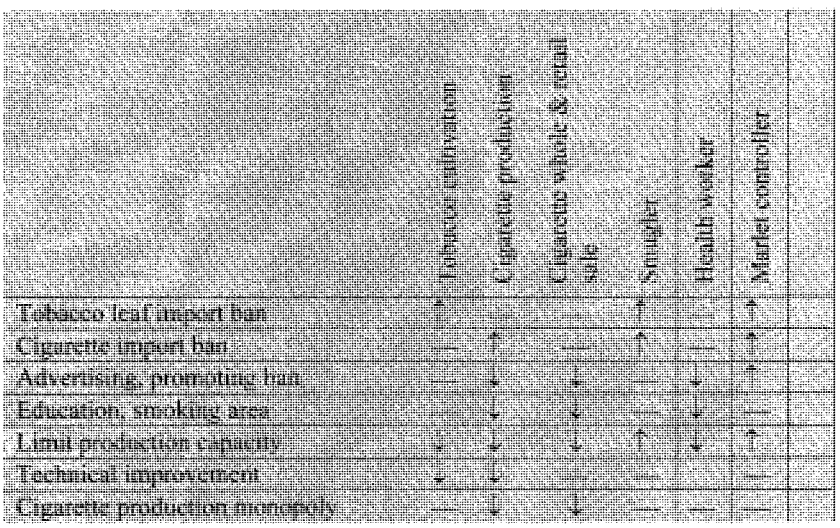
Cigarette consumption in Viet Nam may continue to grow as a result of rising personal disposable income, which may increase the number of people who smoke and affect the types of tobacco products they consume (loose versus manufactured cigarettes, lower quality versus higher quality cigarettes). Considering this consumption growth trend, tobacco control policies may not reduce tobacco consumption, and therefore may not negatively impact jobs associated with the tobacco industry, at least in the short-term. Instead, tobacco control policies may only slow the growth of tobacco-related employment.

Projections of policy scenarios and impact on employment

In order to fully address policy-makers' concerns about the impact of tobacco control on employment, it is necessary to go beyond qualitative analysis and conduct quantitative analysis. This will show the direction and magnitude of the impact of tobacco control polices on employment. In addition, such an analysis could identify changes in employment distribution across sectors or geographical regions, and indicate the magnitude of such an effect. Nearly all quantitative studies conducted to date use the input–output analysis framework.

Input–output allows for the examining of relationships within an economy, both between businesses and between businesses and final consumers. The analysis captures all monetary market transactions for consumption in a given time period. The resulting mathematical formulae allow scrutiny of the effect of a change in one or several economic activities on an entire economy.

Figure 9. Employment Effect Matrix



The core of the analysis is the construction and manipulation of input–output tables. These tables describe the flow of goods and services in the economy in matrix form. There are three different matrices in a standard input–output model: an inter-industry transaction

matrix, a direct requirement matrix and a total requirement matrix. Unfortunately, for Viet Nam, it was not possible to obtain detailed input–output tables so this input–output analysis could not be done. It is hoped in the future that input–output analysis of the tobacco industry will be possible.

As a quantitative analysis is not possible, we will rely on a qualitative analysis of the potential impacts on employment of stricter enforcement and more widespread implementation of the National Tobacco Control policy's various components.

Reduction of demand

The National Tobacco Control Policy has concrete goals for reducing tobacco use during the 2000 to 2010 period. The plan is to reduce the proportion of male smokers from 50% to 20%, of female smokers down to less than 2% and reduce the proportion of young smokers (15-24 years of age) from 26% down to 7%. These planned reductions are in line with trends in reduction in tobacco use between 1992–1993 and 1997–98 as observed in the two Living Standards Surveys. Given current smoking rates, the share of cigarettes in tobacco products and the quantity of cigarettes currently consumed, the plan to reduce the amount of tobacco smokers would lead to a decline in total demand for cigarettes of some 1 thousand million packs per year by 2010.

The policies designed to reduce demand for tobacco products mentioned above will lead to both decreased smuggling and domestic production and therefore declines in employment in tobacco growing and cigarette manufacturing. At the same time, these policies may have other impacts on employment. Strengthening IEC about the health impacts of tobacco products and providing assistance for smoking cessation will require increased employment in health counselling. The ban on cigarette advertising, smoke-free areas and health warning labels will necessitate an expansion in market police to monitor compliance. Increasing the price of cigarette products through monopoly production, price floors or taxes while reducing the amount of cigarettes demanded because of higher cost, may also lead to greater smuggling as the relative price of smuggled products is likely to decline. The anti-smuggling police force would have to be augmented to deal with the growing pressure for smuggling.

Quantitatively, if the targeted decline in demand for cigarette products is observed without considering changes in consumer preferences away from loose tobacco towards manufactured cigarettes, or from lower-quality to higher-quality cigarettes, a decline in employment proportional to that in total demand for cigarettes could be considered. Thus, one could expect a drop in employment in the range of 90 000–108 000 workers in tobacco-related production and distribution. If there is a switch from loose tobacco to manufactured cigarettes, the decline will not be as dramatic since some smokers will quit while others will switch to cigarettes. As smokers switch to higher-quality brands, it is likely that some employment will be lost in cigarette manufacturing as higher quality brands tend to use more capital intensive production methods. Also, if quality of domestically cultivated tobacco leaf does not increase, as people switch to higher quality brands, the need for imports of materials will increase, and employment of Vietnamese tobacco farmers may decline.

One should also consider greater demand for other products as expenditures on cigarette products decline, consumers will use their resources to buy other products, which will have an impact on employment in other industries. At this time, no information is

available to understand what consumers will buy with their savings from a drop in tobacco consumption.

Of course, it is not yet known whether the goals will be achieved, but it is useful to have a quantitative goal to assess the ease or difficulty of achieving it and the costs involved, especially in terms of employment.

Reduction in supply of tobacco products

The Government policy on supply of tobacco products currently restricts the expansion of the industry in Viet Nam. As the industry is close to its production capacity now, only minimal employment creation can be expected in cigarette manufacturing if demand increased. In fact, as quality increases requiring less labour-intensive production methods, it is likely that employment will decline as consumption shifts to higher-quality products. However, there is currently great potential for increasing employment and incomes in the cultivation of higher-quality tobacco products to reduce imports of materials for cigarette production. Currently, 20–25% of materials are imported. If this were reduced to 0.0%, approximately 37 000–45 000 jobs could be created in tobacco cultivation. With higher-quality tobacco leaf it is possible that profits could also be higher.

The control of the cigarette trade will hopefully reduce consumption of cigarettes by young people, thus reducing the future demand by addicted smokers since the earlier a person starts smoking the harder it is to quit the habit. Production of fake products could also be reduced, which wouldn't necessarily reduce employment, just shift it from fake companies to official companies.

The ban on cigarette imports is already in effect but the control of tobacco product smuggling is still weak. As explained above, about 10% of cigarette consumption is accounted for by smuggled imports. If these two policies can better enforce the ban on imports, local production will fill the domestic demand for cigarettes, which will create more employment.

Conclusion

Summary of main results of situation analysis

Production of tobacco in Viet Nam is not stable due to outside influences, especially the import of tobacco leaf from China. Output on average each year is from 20–40 000 tonnes, concentrated mainly in the southern provinces. The Vinataba and Da Nang Tobacco company are paying attention to the development of specialized tobacco-growing areas with high-quality leaf. Agricultural labour in the tobacco industry is slightly over 100 000 people.

Production of cigarettes increased approximately 6% per year during the period 1989–1999, about four times faster than the rate of growth of population. The trend towards improving technology and merging companies into a State monopoly will reduce labour in cigarette production. Labour in cigarette production is currently about 10 000 workers.

Tobacco leaf imports account for 25–30% of total material needs for domestic cigarette production in Viet Nam. The main sources of tobacco are Cambodia, China and Singapore.

In the system of cigarette distribution, 85–90% are household enterprises. The most common mode of operation is to sell a diversity of goods, including cigarettes. Labour in sales of cigarettes usually is not just dependent on sales of cigarettes, but a wide range of other goods as well. The total full-time equivalent labour in distribution is 23 000 people.

Policy recommendations:

Agricultural labour involved in tobacco cultivation has a high level of flexibility with low opportunity costs of moving out of tobacco cultivation. Nevertheless, efforts should be made to find alternative crops to tobacco to ensure that farmers do not develop a vested interest in continuing tobacco cultivation, putting pressure on the Government to be more lax in enforcement of tobacco control policies.

A State monopoly and cap on cigarette production is a good policy direction for production restructuring. It can lead to savings in capital investments, improvements in quality, better management of production and distribution and higher prices of cigarettes, although it will also reduce employment.

Counselling activities for smoking cessation, IEC on harm to health from smoking will create employment for health workers and public health workers, but will reduce employment in cigarette production as smoking prevalence declines.

Bans on advertising and creating smoke-free areas will reduce consumption and therefore employment in cigarette production.

Reorganization of the tobacco sales system may help the Government to better regulate smuggling and sales of tobacco products to minors, thus reducing future tobacco consumption.

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Privatization of state-owned tobacco enterprises in Turkey and Ukraine

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Introduction

In recent decades, tobacco use and its impact on health have gained considerable medical, media and political attention in developing and developed countries. A wealth of research has left no doubt that tobacco increases morbidity and mortality risks. Tobacco caused 4 million deaths in 2000, and if current smoking patterns persist, by 2030 tobacco will kill 10 million people annually, and 7 million of these deaths will be in developing countries.

Empirical evidence from both developed and developing countries shows that there are effective measures that can reduce tobacco use, including higher prices through increasing tobacco taxes, bans on tobacco advertising and promotion, restrictions on smoking in public and work places, and help for smokers who wish to quit. Many countries have been implementing such measures, and smoking prevalence rates and per capita cigarette consumption have fallen in some countries, most notably in Australia, Canada, Poland, the Scandinavian countries, South Africa, Thailand, the United Kingdom and the United States of America. But tobacco use remains high in many other countries, and there have been large increases in use of tobacco products in many middle- and low-income countries.

On the supply side of the global cigarette market, the major cigarette-producing companies have invested heavily in production capacity in low- and middle-income countries through direct investments, joint ventures and purchases of State-owned cigarette companies. Local production avoids import duties and enables companies to take advantage of lower labour and transport costs, and less stringent restrictions on nicotine and tar levels as well as requirements for disclosure of these toxic ingredients.

Some public health advocates worry that the expansion of multinational tobacco companies across the globe is undermining national and international efforts to reduce tobacco product consumption. In several countries, cigarette companies appear to have been able to influence important aspects of tobacco-control policy, especially taxation levels. And if companies can reduce their production costs, they have the option of selling at lower prices, which will boost sales. Aggressive and sophisticated marketing and distribution aimed at increasing market share may also increase total sales. International cigarette manufacturers also tend to produce more appealing cigarettes. Although there may be benefits to consumers, to associated industries (such as the media and advertising industries) and to the countries' foreign investment flows, if privatization and other investments by multinational cigarette companies increase total cigarette consumption, this will lead to a higher future burden of ill health, healthcare costs and premature deaths.

The key policy question is whether privatization exacerbates the adverse health impact and market failures that beset tobacco products, and if so, what regulatory or other measures would be appropriate. This paper examines the impact of the entry of private-sector cigarette manufacturers into Turkey and Ukraine from a public health perspective, looking at changes in cigarette prices, product appeal and production and consumption levels.[1]

The first section of the paper provides a short background on global privatization trends and reasons, and on the two country case studies. Trends in cigarette production levels before and after privatization are reviewed in the second section and then related to trends in total consumption. The third section explores the impact of privatization on cigarette prices. A discussion of the impact of privatization on product appeal comprises the fourth section and the fifth section considers some of the political issues in privatization decisions. Finally, the results of the analysis are summarized, and based on the evidence presented, the pros and cons of privatization and policies to mitigate the potential adverse health impact are addressed.

Background

a. Global privatisation

Privatization emerged as a global trend in the 1980s due to emerging capital markets and deteriorating conditions of State enterprises that diminished profits and increased the burden on State budgets. Major privatization of State enterprises began in the United Kingdom[2] under Margaret Thatcher, and then spread especially to Latin America, where attempts to improve the performance of State-owned enterprises under continued State ownership had largely failed. Between 1980 and 1991 roughly 6 800 medium- and large-scale State-owned enterprises were privatized. The second (and biggest) wave of privatization occurred during the 1990s, as transitional economies sought to transform themselves into market economies. After the collapse of the socialist economic system in the early 1990s 60 000 medium- and large-scale State-owned enterprises were privatized (Havrylyshyn & McGettigan, 1999; Nellis, 1998; Kikeri, 1998). In the early 1990s one-third to one-half of all foreign and domestic investment in Eastern Europe and Latin America was for privatization (Sader, 1995).

Privatization has generated strong revenues for governments. Between 1988 and 1993, developing countries generated US$ 96 thousand million, of which US$ 25.7 thousand million was from sales of manufacturing enterprises, especially chemicals (Van der Hoeven & Sziraczki, 1997).

There are few countries left in the world that have *not* privatized (the exceptions are Cuba, Myanmar and the Democratic People's Republic of Korea). Well over 100 000 medium and large enterprises have been privatized in one form or another in the last two decades. Privatization has touched every sector, from companies producing tradable goods,

[1] Although privatization might also have affected the prices of raw tobacco and hence tobacco farmers, this paper does not deal with this issue.

[2] A total of 75 enterprises were privatized, and over 30 major enterprises valued at over £27 thousand million and employing nearly 800 000 people (around 3.3% of the work force) were transferred to private enterprises (Parker and Hardley, 1991).

through infrastructure firms, and more recently to units providing social services, such as health and education.

Table 1. Sectoral distribution of privatization by region, 1988–1993

Sector/region	Primary sector	Industry	Infrastructure	Financial services	Other	Total amount in US$ thousand millions
Latin America	15	18	41	24	2	55.2
East and Central Asia	8	50	11	21	10	17.9
East Asia and Pacific	6	29	45	10	10	16.1
South Asia	22	44	4	24	6	6
Sub-Saharan Africa	25	7	1	4	63	2.4
North Africa and Middle East	7	39	8	34	12	0.7

Source: Sader, 1995

Many countries had originally established State-owned enterprises (SOEs) for a variety of reasons: (a) to increase government revenues, and in some cases to control prices; (b) to compensate for insufficient private investment; (c) to control the economy and achieve self reliance; and (d) to protect national security. Over the years, some State enterprises were abused by those in political power, and some became a burden on the government budget and slowed economic growth. There were many factors that undermined the profitability and viability of State-owned enterprises. They include:

- overstaffing,
- excessive wages and employee benefits,
- the absence of a hard budget constraint and availability of government subsidies to loss-making enterprises,
- low autonomy and inappropriate incentives for managers,
- inefficient and unproductive operating conditions,
- outdated technology,
- corruption, and
- poor-quality products protected by import restrictions.[3]

Governments have had various objectives when privatizing, including generating government revenues, attracting international and domestic capital as well as promoting enterprise restructuring and a more equitable distribution of wealth. Some analysts argue that governments in transitional economies adopted massive privatization as an outcome of the political process and that the privatization process was accelerated to reduce the growing corruption of officials after the collapse of the socialist economic system, in addition to ruling out the possibility of a communist comeback. As a result, many governments dispersed share ownership with inadequate legal and regulatory environments and with little consideration given to post-privatization enterprise governance (Pivovarsky, 2001).

State-owned cigarette producers have been swept up in the global privatization whirlwind—even though there is a long tradition of State involvement and ownership in the tobacco industry even in market economies. Generalizations about privatization of cigarette

[3] Obviously, the situation differed across countries and across enterprises.

enterprises must be made with care, because country experiences and market structures differ considerably. Some countries have changed from a State monopoly to a private monopoly (e.g. Kyrgyzstan); in others, joint ventures with private industry have been established (e.g. Ukraine). Others have allowed private producers to enter the market and to compete with a State-owned former monopoly producer (e.g. Turkey). Market structure, methods of privatization and specific privatization agreements may all influence pricing, consumption, marketing, productivity and the environment within which tobacco control measures are implemented. Our case studies, Ukraine and Turkey, differ with respect to several of these factors, and it is not possible (given the data at hand and the exploratory nature of this analysis) to clearly distinguish the impact of different market structures and policies from the impact of privatization.

b. Country background: political, economic and market structure

Turkey is a well-established capitalist market economy. Labour unions have had very strong negotiating power in the private sector and large membership. Turkey is an upper-middle-income country that has enjoyed increasing per capita income. However, growth has faltered and entrenched inflation is a problem. An extensive economic reform programme was introduced in 1999, but progress has been hampered by a severe financial crisis in 2000 and 2001. By contrast, Ukraine had a socialist political system until the early 1990s and is in the process of establishing a market economy and undertaking extensive economic and social transformation. Ukraine has experienced severe economic dislocation since its independence in 1991. High inflation and large declines in real wages and output have imposed severe economic and social hardship on the population (Gupta, Harris & Mourmouras, 1998). Ukraine is a low-income country, and is just beginning to emerge from a long period of negative growth.

Ukraine has privatized six of its eleven (originally) State-owned cigarette factories. Privatization began with establishment of joint ventures, but the Government share decreased tremendously during the late 1990s and some joint ventures became 100% private enterprises in 2000. The Government still owns and operates small cigarette factories but the market share of these factories is only 8%, with 92% of all cigarettes produced in Ukraine by private enterprises. The situation in Turkey is different: TEKEL, the Government-owned enterprise, is still the largest cigarette producer, but the Government plans to privatize TEKEL by 2002–2003. Since 1992, the Turkish Government has allowed international tobacco companies to produce and sell cigarettes in Turkey. Private production started in 1993, and the private enterprise share of the market increased rapidly to 30% by 2000.[4] The entry of multi-national tobacco companies generated substantial investment flows in Turkey and Ukraine: foreign cigarette companies invested US$ 180 million in Ukraine and more than US$ 500 million in Turkey (USDA report, 1998, 2000; Krasovsky, 2001).

[4] The market structure in both countries can be described as "monopolistic competition"—a market structure between the extremes of perfect competition and monopoly. In this market structure: (a) many firms produce cigarettes; (b) each firm produces products/brands that are differentiated (i.e. different in character from all other products produced by the other firms in the industry (e.g. light king-size American blended cigarettes, cigarettes with mint, soft-packaged Virginia blended filtered or unfiltered cigarettes, long or short cigarettes) and (c) the differentiated products are imperfectly substitutable in consumption. Thus, if the price of one good/brand were to rise, some (but not all) consumers would switch to another product. This is intermediate between perfect competition, in which goods are perfectly substitutable and a monopoly, in which there are no substitutes available.

Government employees in both countries enjoyed job security, relatively high salaries[5] and generous benefits[6].

In Ukraine, as in other formerly socialist countries, State enterprises provided many benefits to employees (Gupta, Harris & Mormouras, 1998)[7]. Many workers in post-socialist countries were guaranteed lifetime employment, provided with childcare and schooling for their families, food, vacations, leisure facilities and housing. Many firms also supported services and infrastructure such as heat, water and sanitation, schools, and hospital buildings that served the entire local community (Blasi, 1996; World Bank, 1998).

Privatized firms inherited these packages of non-wage benefits, but are unlikely to be able to provide such services in a competitive market. Divesting these State-enterprise social assets (housing, hospital care, childcare and kindergartens) without creating a negative social impact for employees became a problem in the transition economies. Privatization has also often resulted in increased use of non-unionized contract labour, fewer benefits, longer hours and larger wage differentials. Without creating a legal and regulatory environment and social safety nets, ignoring these factors may be vital for private enterprises. For example, in 1994 when a joint cigarette venture was formed in Ukraine, employees' working conditions deteriorated. Kindergartens for employees' children were closed, working hours were increased to 12 hours a day without extra pay, salaries were not increased for four years after the joint venture was formed, and the construction of new employee apartments, which had started before privatization, was stopped. These conditions led to a general strike in 1996, and the factory laid off more than 300 people in 1997. Finally, the new owners decided to close the factory altogether in 1998, just before the end of the profit tax holiday granted by the Government to encourage foreign investment (Krasovsky, 2001).[8]

Privatization of State-owned tobacco enterprises

Many studies have examined the impact of privatization on firm performance, the returns to owners and investors, and on countries' macroeconomic and sociopolitical situations.[9] Most of the discussion focuses on whether and to what extent privatization

[5] In Turkey, for example, workers in loss-making, State-owned textile, iron and steel firms earn three times more than people doing equivalent work in the private sector (World Bank, 1998). Similarly, in 1997, employees in State cigarette enterprises in Turkey earned, on average, US$ 7,534 a year, 15% higher than average annual gross salaries in the public and private sectors. In 1998, the differential increased to 34% higher than the public sector and 27% higher than the average private sector annual gross wage.

[6] In post-socialist countries non-wage benefits and services can amount to 35% of enterprise labour costs in extreme cases. In the Russian Federation an average enterprise spent 6% of sales and 21% of net profits on kindergartens, day care centres, cafeterias and apartment buildings (Blasi, 1996; World Bank, 1998). But this was also the case in other countries. In 1989, non-wage benefits were equivalent to 20% of wages in Africa, 20–35% in Asia, and 24–27% in Latin America (Banerji & Sabot, 1994; World Bank, 1998).

[7] Ukraine inherited a well-developed system of social protection, comprising pensions, allowances for families with children, unemployment and disability benefits, and subsidies for housing and communal services. It spent 17.4% of GDP on these programmes in 1995, in 1996 these outlays are projected to rise to 18% of GDP. Most social programmes are financed through the taxation of wages, but tax rates amounting to 52%, have raised the cost of labour.

[8] Similar experiences were observed in other countries. For example, in Argentina, after the privatization of the telecommunications and electricity companies, work hours increased from 35 hours per week to 40 hours per week. Wages were more closely linked to productivity, and certain types of overtime and leave were eliminated (Shaikh, 1996).

[9] A useful (and searchable) compilation of the privatization literature is to be found at http://rru.worldbank.org/Resources.asp. The site also includes links to other websites on privatization.

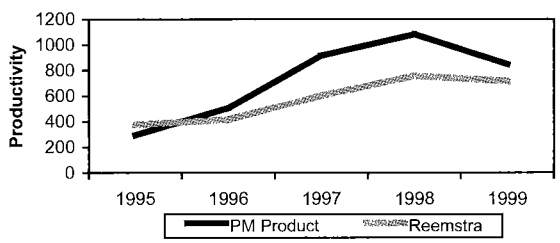
enhances efficiency and welfare (Galal et al., 1994). Although there have been some assessments of privatization in specific industries, no one has systematically looked at the tobacco industry, and indeed there has been almost nothing written on the impact of privatization in the tobacco industry on cigarette consumption and hence on public health. It is likely that health issues have been eclipsed by concern for major macroeconomic issues. Many developing countries have privatized as part of broad adjustment programmes designed to address severe macroeconomic problems, transform economies and promote efficiency and economic growth.[10] It is understandable that these concerns have dominated policy decisions. But health outcomes have recently gained increasing recognition as being important factors in economic growth as well as individual and family welfare. Tobacco is one of only two causes of death (the other is HIV/AIDS) that are causing rising numbers of deaths worldwide. This makes it important to assess the impact of privatization on health, through its effect on prices and other key determinants of tobacco consumption.

The impact of privatization on production

Privatization is widely expected to improve productivity and efficiency, which usually also implies an increase in production. Reviews of privatized industries find that this is often achieved. But if increased production by cigarette producers is accompanied by higher consumption, this will have a negative impact on public health.

Efficiency[11] can be increased in many ways regardless of ownership status, including through introducing better technology that increases labour productivity and reduces production costs, or through re-organization of the production process or plant layout that enables savings in labour use (or other inputs). Given the data that are available, we use labour productivity (output or cigarette production divided by labour) as an indicator of the efficiency of cigarette producers. A graph of changes in labour productivity over time (Figure 1) shows that private cigarette enterprises in Ukraine achieved substantial increases in labour productivity between 1995 and 1998, with some decline in 1999.

Figure 1. Labour productivity trends in private cigarette enterprises in Ukraine, 1995–1999

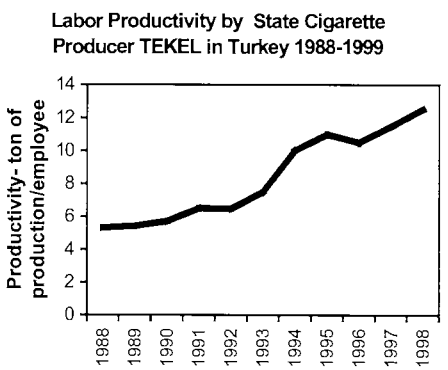


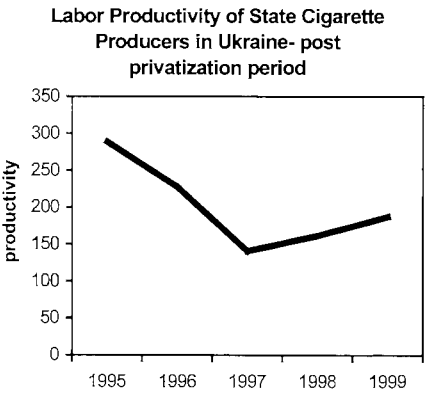
[10] It is important to remember that most countries also implement many other structural reforms such as tax reform, price and trade liberalization, and financial-sector reform as part of structural adjustment and economic transformation programmes, all aimed at promoting efficiency and growth and mitigating severe macroeconomic imbalances. Most of these structural reforms have either direct or indirect effects on prices and consumption of many goods, including cigarettes. For example, trade liberalization would lead to higher cigarette consumption if (a) it increased the varieties of cigarette brands from which consumers could choose; (b) free trade reduced the price of all brands sold in the market; and (c) free trade increased the supply of cigarette products in other markets and resulted in lower prices for these products (Steven Suranovic, 1997; Curbing the epidemic, 1999)[10]. The impact of these broader reforms on consumption and prices of cigarettes are beyond the scope of this paper.

[11] Efficiency gains are defined as achieving the same level of output with fewer inputs, and hence at lower unit cost, or conversely, producing a higher level of output with an unchanged level of inputs.

Labour productivity trends in State-owned cigarette enterprises in Turkey and Ukraine show quite different pictures: TEKEL was able to improve labour productivity after 1993, but labour productivity in the Ukrainian State producers fell between 1995 and 1997, with a modest improvement through 1999 (Figure 2).

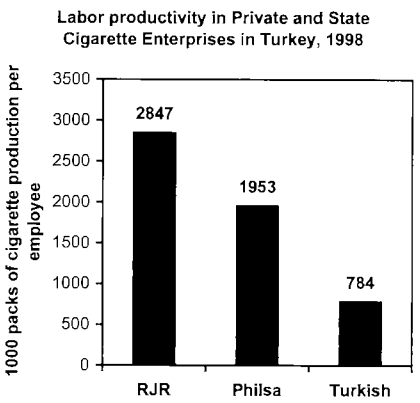
Figure 2. Labour productivity of State and private cigarette enterprises in Turkey and Ukraine



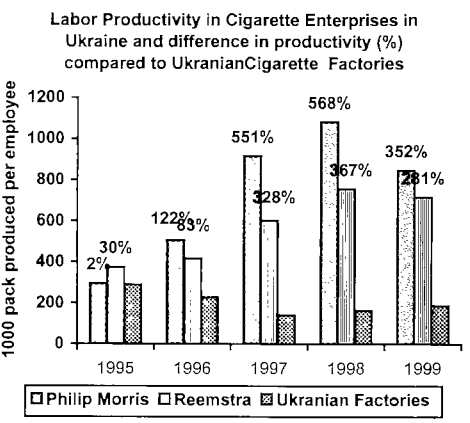


The differences in labour productivity between the State cigarette enterprises and private enterprises in each country are stark (Figure 3). Since labour productivity is a function of output and labour input, labour productivity can be raised by reducing the labour force, and/or increasing production. Since it is total consumption that is of relevance to public health (and consumption is equal to production net of cigarette trade flows), we will focus on production levels, and not labour reductions, although of course labour reductions may have significant welfare implications.

Figure 3. Efficiency of State cigarette enterprises in Turkey and Ukraine



Source: Onder, Kasnakoglu & Cakmak, 2000



Source: Krasovsky, 2001 and World Bank calculations

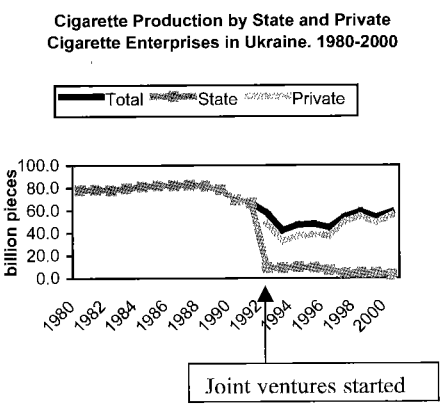
In an industry that requires high levels of investment (fixed costs) mostly in capital[12] (equipment), and operating as price takers in a competitive environment, it often makes economic sense to increase output levels. The larger the output, the more the fixed costs can be "spread out", lowering the fixed cost per unit of production. The private cigarette producers in Ukraine and Turkey made substantial investments in additional production capacity: Philip Morris invested US$ 50 million in Ukraine, and Reemstra invested US$ 76 million (Table 2). Philip Morris increased its production from 2 thousand million packs to 14 thousand million packs between 1993 and 2000 and Reemstra increased its production from 10 thousand million packs to 22 thousand million packs during the same period. Philip Morris invested US$ 230 million in Turkey and increased its production from 12 to 30 thousand million pieces between 1993 and 2000. Most of the increase in cigarette production in Turkey since 1993 is due to private production (Figure 4), although TEKEL also increased output substantially in the 1990s.

Table 2. Privatization of cigarette enterprises in Ukraine and Turkey 1993–2000

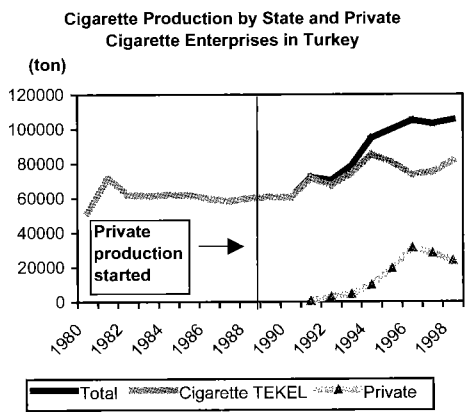
Country	Investor	Joint venture or subsidiary	Total amount US$ million
Ukraine	British American Tobacco (BAT)	Priluki	28
	RJ Reynolds (RJR)	Lviv and Kremenchuk	26
	Reemstma	Cherkassy and Kiev	76
	Philip Morris	Kharkiv	50
Turkey	Philip Morris	Torbali	230
	RJR/JTI	Izmir	N/A
	BAT	Izmir	250

Source: USDA, World Tobacco Marketfile, Krasovsky, 2000

Figure 4. Cigarette production pre-post privatization period



Source: Marketfile, Krasovsky 2001, World Bank Calculations



Source: Tekel, Onder 2001, Kasnakoglu,Cakmak.,

[12] Often, one reason for inefficiency in State enterprises is outdated technology, when State budget shortages lead to low levels of investment in new technology. Privatization is frequently accompanied by investments in updated and more efficient new technology. In Ukraine, private cigarette enterprises brought in second-hand equipment, which was better than the existing equipment. However, private companies in Turkey invested in updated efficient technology and increased production capacity in one of the companies from 12 thousand million sticks a year in 1993 to over 30 thousand million sticks in 2000.

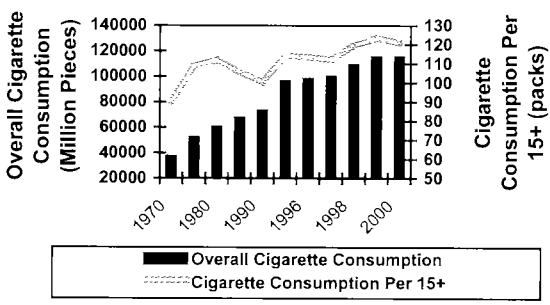
The impact of privatization on cigarette consumption

Cigarette consumption is a function of several important factors, including income, price, demographic characteristics of the smokers and tobacco control measures. Evidence from developing and developed countries shows clearly that cigarettes are normal goods, whose consumption increases as incomes rise.[13] Onder (2001) found a positive and significant income effect on cigarette consumption for Turkey. There is a wealth of economic evidence showing that cigarette consumption is strongly related to changes in cigarette prices, smokers' educational level, information "shocks" on smoking and health, smoking restrictions in public and work places, and also to cigarette advertising and promotions (for which fairly strong effects have been found, especially among youth and women with clearly targeted marketing).

To analyse the impact of privatization on cigarette consumption, ideally, a demand model should be estimated that includes privatization and all other significant determinants of consumption. Since this paper aims to explore the mechanisms through which privatization may affect final consumption and the intermediary variables such as price, it examines key factors in turn, looking first at consumption trends before and after entry of private cigarette producers and briefly discussing trends in real income and population growth. Section 3.3 then focuses on price, the most powerful single determinant of consumption. The following section reviews tobacco control measures.

Turkey. Two key factors should have reduced cigarette consumption in Turkey in the past decade. Since the mid-1990s, high inflation in Turkey has eroded real incomes and purchasing power, exacerbated by severe economic crises in recent years. A number of tobacco control measures (health warnings and smoking restrictions in public places and a ban on advertising) have been introduced (and are described further below). But the increases in cigarette consumption between 1970 and 1990 (a 95% increase from 37.5 thousand million sticks to 73.3 thousand million sticks) continued through the 1990s. From 1990 through 1995 consumption increased by 32% to 96.5 thousand million sticks, and continued to increase (although at a slower rate) during the period of economic crises, increasing 20% between 1995 and 2000 to 115.5 thousand million sticks. Even controlling for the high rate of population increase, cigarette consumption per capita increased by 34% from 90 packs in 1970 to 121 packs in 2000.

Figure 5. Cigarette consumption trend in Turkey



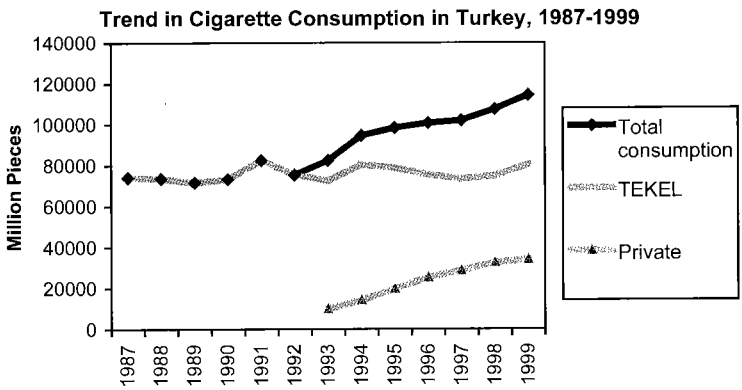
Source: USDA and World Bank calculations

[13] Economic theory distinguishes among normal, luxury and inferior goods, depending on how consumption responds to changes in income.

The consumption trends in the years just before and after the entry of private producers are especially interesting. Total cigarette consumption (domestic production plus imports minus exports) remained fairly constant between 1987 (74 thousand million sticks) and 1993 (75.4 thousand million sticks). Cigarette imports were negligible between 1991 and 1999. Total cigarette consumption increased dramatically from 75.4 thousand million sticks in 1992, when private production started, to 114.4 thousand million sticks in 1999, with 87% of the increase accounted for by private producers. This suggests that the private producers were very successful in capturing a growing share of the existing market *and* in creating additional demand for their products.

Onder and Bilir (2000) suggest that much of the additional demand is from new smokers: the prevalence of smoking among youth has been increasing among middle and high school students, and the age at which smoking starts has fallen to the early teens[14].

Figure 6. Cigarette consumption pre-post private production period in Turkey



Source: TEKEL, Cakmak & Kasnakoglu, 2000, World Bank calculation

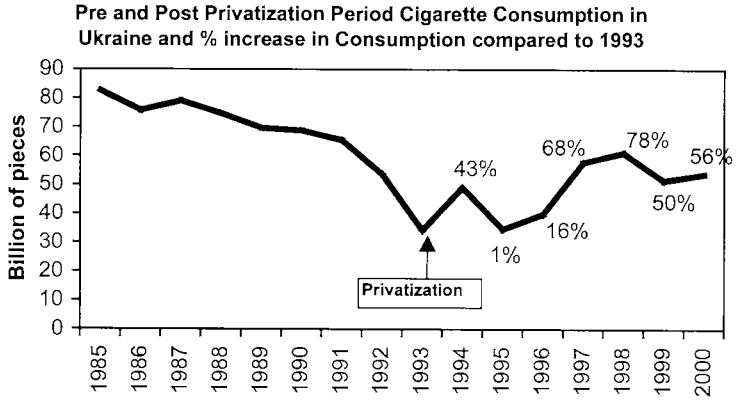
Ukraine. Legal cigarette consumption in Ukraine had been decreasing during the 1980s and reached its lowest level during the economic turmoil in the early 1990s. There are no data to show whether smokers reduced their cigarette consumption or switched to smuggled cigarettes during that time. According to a USDA report in 2000, smuggled cigarettes accounted for 27% of total cigarette consumption in Ukraine in 1998–1999. Most cigarettes smuggled from the Russian Federation and Moldova are cheaper than the locally produced unfiltered cigarettes. Current cigarette consumption level is still below the earlier peak level, but since privatization, total legal consumption has been increasing.

To summarize, private producers have higher labour productivity than State enterprises and their production levels have been increasing rapidly both in Turkey and Ukraine. At the same time as production has increased so has cigarette consumption. Before examining the single most important determinant of cigarette consumption—cigarette prices,

[14] Using a sample of 6 715 (5 792) persons in 1999 (1998) living in 34 districts in Turkey, Bilir (2000) estimates that 0.8 (2.0) % of the students at the 7th grade and 14.8 (16.3) % of students in the 12th grade were smokers in 1999 (1998). Although the prevalence rate for both 7th and 12th grade students declined from 1998 to 1999—2% to 0.8% for 7th, and 16.3 % to 14.3% for 12th graders, it is still very high. Only 70 (69.1) % of the 12th grade students never smoked in their lifetime.

and to assess the effect of privatization on prices, it is important to discuss two important factors affecting consumption—non-price tobacco control measures and marketing.

Figure 7. Cigarette consumption in Ukraine, pre- and post-privatization



Source: USDA, Marketfile for Ukraine, Krasovsky, 2001

Non-price tobacco control measures and marketing

Since the late 1980s, Ukraine and Turkey—like many other countries—have introduced control measures. They include TV and radio advertising bans, health warnings on cigarette packages, restriction of sales to people under 18 years of age, bans on smoking in public places, including health and education facilities, and smoking restrictions in work places. Turkey has also raised tobacco taxes and aired anti-tobacco advertising on TV. Ukraine has banned free distribution of cigarettes (but reduced taxes). Although the set of measures is quite comprehensive on paper, there are important loopholes, and implementation of many measures has been weak.

Since 1993, the private enterprises in Turkey have used aggressive marketing techniques, including handing out free packs of cigarettes near high schools. Turkey's otherwise strong tobacco control law does not prohibit distribution of free cigarettes, nor are there any special provisions to restrict advertising and distribution in the vicinity of schools. These gaps in the tobacco control measures made it easier to recruit new smokers, which was also helped by the country's demographic profile: more than 40% of the population is under 18 years of age. Although there is a severe penalty for smoking in restricted areas, there is no one designated as responsible for enforcement or collecting fines. Traditionally, it is also common for children to buy cigarettes for their parents from local grocery stores. And the anti-tobacco advertising—90 minutes each month—usually takes place after midnight when there are few viewers.

Private producers in Turkey also tailored products to existing smokers, carefully analysing the preferences of smokers and then blending cigarettes to match smokers' tastes. And private producers made their brands easily accessible to smokers and retailers across the entire country. Traditionally, retailers have bought cigarettes from TEKEL's distribution centres. At first private producers used the same distribution channel, but found it inadequate to meet their marketing and distribution goals. So they created their own distribution system. They hired thousands of additional sales people in Turkey and distributed their brands

directly to retailers, including in remote areas. Private producers also increased point-of-sale advertising, including recruiting a large number of small, family-owned shops to support their vast in-store marketing plan (USDA report, 2001).

Impact of privatization on price

In principle, privatization could affect consumer prices in two ways:

- If privatization leads to higher efficiency and lower unit costs of production, then an enterprise may choose to reduce consumer prices.
- If State-owned enterprises were being subsidized by the Government, a reduction in subsidies after privatization might result in higher consumer prices.

In order to evaluate these two effects on cigarette prices, cigarettes prices of State and private enterprises are compared, and pricing policies and Government influence on prices are examined.

Price structure of cigarettes produced under private and State ownership

The pricing decision of firms is affected by the market structure (degree of competition or oligopoly power), production cost structure, demand function facing the firm, and the firm's own objective function (e.g. private producers try to maximize profit). There are several cigarette producers in Turkey and Ukraine, making products that are imperfect substitutes, and in Turkey, there is the added complication of a significant Government influence on pricing. We do not have enough information to know which of these factors explain the price differentials among brands produced by private and State-owned companies, or what effect on prices privatization of TEKEL in the future may have.

Table 3. Domestic and foreign brand prices in Turkey (Turkish Lira/pack, nominal price)

	Domestic Brands			
	Tekel 2000	**Bafra unfiltered**	**Marlboro short**	Price difference between Marlboro and Tekel (%)
1987	600	162	1200	100%
1988	1133	226	1633	44%
1989	1833	348	2433	33%
1990	2714	605	3595	32%
1991	4382	756	6406	46%
1992	6917	992	9688	40%
Private production started				
1993	11113	1548	14298	29%
1994	26750	3250	31667	18%
1995	36292	5258	45681	26%
1996	65840	10751	85298	30%
1997	150417	23708	171667	14%
1998	232124	39382	295833	27%
1999	378333	80000	486458	29%
2000	656818	202273	831818	27%

Source: TEKEL, and Kasnakoglu & Cakmak, 2001
Note: Prior to 1993, Marlboro prices include import duties

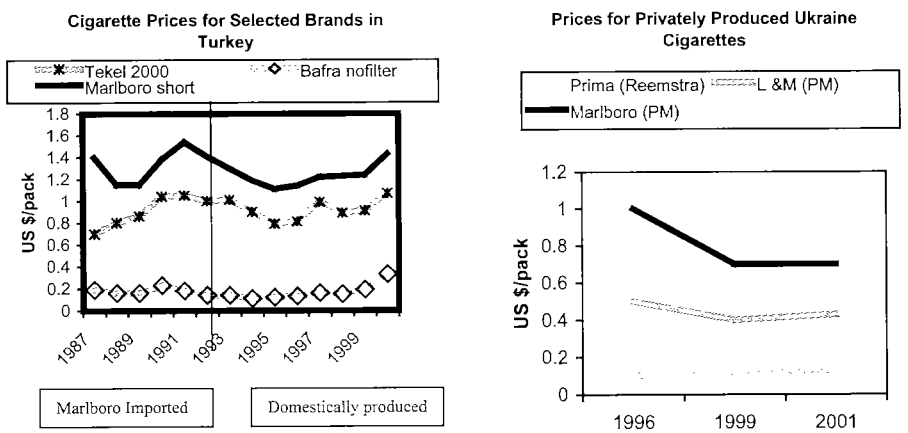
Historically, prices of brands produced by TEKEL have been much lower than the most popular privately produced brands in Turkey. For example, after 1993, the price of Tekel 2000, the most popular and most expensive State brand, is on average about 25% lower than the most popular privately produced brand Marlboro. Since 1993, Marlboro has been produced in Turkey.

Pricing policy in Turkey

In principle, TEKEL determines its cigarette prices itself, but in practice the Government influences pricing decisions. For example, in 1998, the Government advised TEKEL to keep price increases to a minimum, in line with anti-inflationary Government policies. TEKEL adjusted prices in line with inflation. In 1999, TEKEL was asked to increase its prices, in part to help pay for the damage from the Turkish earthquake, and the real price of all TEKEL brands increased; Maltepe and Birinci (popular filter and unfiltered brands) real prices increased by 58% and 70% respectively.

Private producers in Turkey set their own prices, without any Government control. However, private producers appear to set their prices at a fairly constant premium relative to TEKEL's prices. Figure 8 shows the most popular foreign brand Marlboro following the same price pattern as the most popular and expensive domestic brand Tekel2000.[15] When TEKEL was advised by the Government to keep price increases to a minimum in 1998, private cigarette producers delayed price increases (USDA report, 2001), and adjusted their prices roughly in line with the (high) inflation rate. Similarly, when TEKEL increased its brand prices in 1999, private producers also increased prices of their brands.

Figure 8. Price pattern of cigarettes produced by State and private enterprises in Turkey and Ukraine in US$



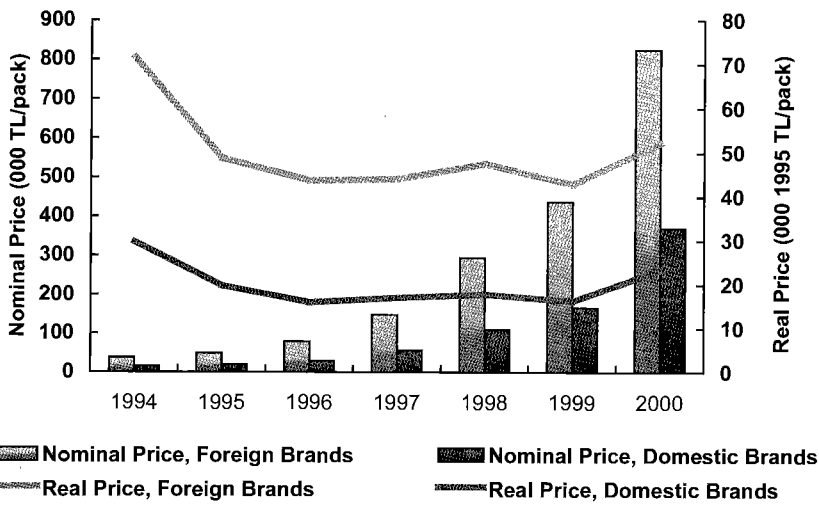
Source: Krasovsky 2001, and Cigarettes: Central and Eastern Europe, 1999

[15] These prices are shown in US dollars. The decrease in dollar prices between 1993 and 1995 is the result of changes in the exchange rate. Prices in local currency did not decline.

There is a similar pricing structure in Ukraine among private producers, who keep an eye on prices of rival brands and appear to maintain fairly stable price differentials—at least between 1999 and 2001. Prima has been the most popular and widely smoked traditional Ukrainian cigarette. It was produced first by the State and, after the joint venture, by Reemstra. Philip Morris introduced popular foreign brands, including L&M and Marlboro. In the early years, when these brands were probably building market share, the price of Marlboro and L&M fell, whereas Reemstra increased Prima's price between 1996 and 2001.

From a public health perspective, it is changes in real prices (adjusting for inflation) that affect consumption levels, rather than changes in nominal prices. In Turkey, real prices decreased from 1994 to 1995, then were stable (with price adjustments approximately keeping pace with the high inflation rate) from 1995 to 1999, and finally increased between 1999 and 2000. This softening of real cigarette prices in the years immediately after the entry of private producers would account for some of the increase in consumption from 94.6 thousand million sticks in 1994 to 96.5 thousand million sticks in 1995. However, since real prices were stable between 1995 and 1999, other factors must have been responsible for the increase in consumption during this period. When the real price increased in 1999, the rise in cigarette consumption stopped, and remained at 114 thousand million sticks in 2000 as well.

Figure 9. Nominal and real cigarette prices in Turkey, 1994-2000



Source: Onder, 2001; TEKEL; World Bank calculation

How does TEKEL keep its brand prices lower than the competitors' prices? We do not have data on TEKEL's operating costs, but a comparison of TEKEL prices in 1999 with the available data on cost of production suggests that some of TEKEL's most popular brands are sold at below the cost of production (including taxes). TEKEL may be profitable overall and be using other more profitable brands to cross-subsidize "loss-making" popular brands, in order to maintain its market share in the face of stiff competition from its private rivals. Alternatively, the different brands' profits and losses may be the result of the way that fixed costs are allocated across brands. The other possibility is that the Government may have asked TEKEL to keep the prices of the most preferred brands lower perhaps because

increases in their prices may be reflected in the CPI, or because they may be smoked mainly by middle- and low-income smokers.[16]

Table 4. Price structure of cigarette brands produced by TEKEL in 1999

Brands/Price	Samsun 100mm Pack	Tekel2000 100mm Pack	Tekel2001 100mm Pack	Maltepe 85mm Pack	Birinci 68mm Pack
Production cost + Taxes	362,325	601,404	460,103	323,873	318,223
Retail Sale Price	325,000	650,000	500,000	275,000	200,000
Profit/loss	-37,325	48,596	39,897	-48,873	-118,223

Source: IMF

The role of government in determining prices

When governments subsidize loss-making State enterprises, it is important to remember that society bears the burden of this support, however it is financed. Governments often increase excise tax rates (including on tobacco) to be able to cover the losses of State enterprises, shifting the incidence to consumers.

Tobacco has been one of the most highly subsidized agricultural products in Turkey, and large tax revenues are generated from tobacco products.[17] In 1996 Government subsidies and other forms of support to the agriculture sector, including tobacco, amounted to US$ 9.1 thousand million. This was financed through transfers from consumers and taxpayers. Of this, US$ 7 thousand million was financed through implicit taxing of consumers, and US$ 3 thousand million directly from taxpayers (Kasnakoglu & Cakmak, 1998). Governments often worry that increasing consumer prices would be politically unpopular and prefer to keep prices low and to subsidize the losses of State enterprises through internal and external borrowing.[18] In the long run, this is unsustainable. If these subsidies were removed, the resources could be devoted to more socially beneficial uses (such as health insurance and healthcare, for example). Given apparent TEKEL pricing policy and subsidies, it is possible that prices of TEKEL brands will be increased when it is privatized, although not enough is known to be able to predict with certainty.

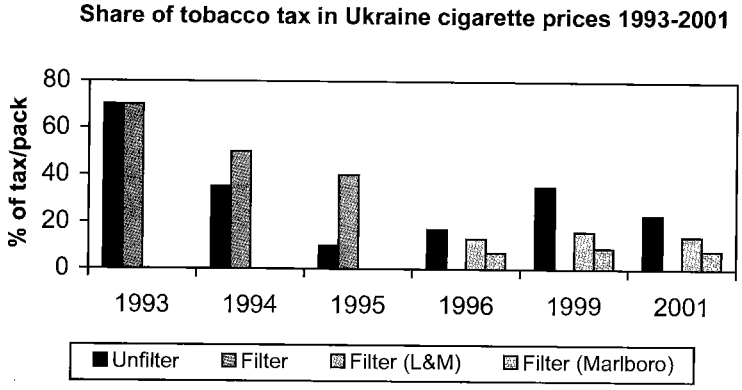
Even after they withdraw from cigarette production, excise taxes are a powerful tool that Governments can use to affect cigarette prices in a fully privatized market. Currently, 77% of average retail cigarette prices in Turkey is tax, and this rate has been increasing over the years.

[16] Based on 1994 household data, Maltepe and Samsun had 40% and 20% market share in Turkey. Among unfiltered cigarettes, Birinci had 78% market share (Onder, 2001).

[17] In 1999, the Government collected US$ 4.4 thousand million in tax revenues from cigarettes alone; 11% of total Government revenue.

[18] For example, TEKEL was US$ 100 million in debt to international tobacco manufacturers in 1994.

Figure 10. Tobacco excise taxes as a percentage of retail cigarette prices in Ukraine



Source: Krasovsky, 2001 & World Bank calculations

In Ukraine, changes in the tax structure and a quite dramatic decline in the tax rate appear to be one of the main reasons for the increasing consumption trend since privatization. When privatization began in 1993, the Ukraine Government introduced an *ad valorem* tax set at 70% of the retail price. Reportedly, in response to requests by private producers, the Ukrainian Government reduced tax rates between 1993 and 1995, and changed the *ad valorem* tax structure to a specific tax. Under specific taxes, if rates are not adjusted in line with inflation, effective tax rates are eroded, as appears to have happened in the mid-1990s. Moreover, specific taxes that levy the same absolute tax amount for all cigarettes, effectively tax expensive brands at a lower rate (in value terms) than cheaper brands. Currently, unfiltered and filtered cigarettes in Ukraine have very low rates when compared to the 1993 *ad valorem* rate and compared to other developing countries. As Figure 10 shows, the tax rate for the expensive brands has decreased the most.

If the price elasticity of demand is less than –1, if prices rise, total revenues will increase. A growing number of studies in low- and middle-income countries find that the price elasticity of demand for cigarettes (the change in the amount of cigarettes bought in response to a change in price) tends to be around -0.8 (and about –0.4 in high-income countries). Onder (2001) estimated overall price elasticity for cigarettes at –0.41 in Turkey, and Krasovsky (2001) found a similar elasticity for Ukraine. So for every 10% increase in price (whether caused by a tax increase or producers), consumption falls by 4%. So firms, or governments could increase their total cigarette revenues by increasing prices/taxes and would see sales fall, which would have positive public health effects.

The impact of privatization on quality

If State enterprises are protected from competition and enjoy high import barriers, there is little incentive to improve product quality or variety. Moreover, State enterprises that are not making profits will have little ability to invest in new technology that would help to improve their products. Introducing competition provides a strong incentive to firms to strive to increase sales and market share, and product differentiation can help. Privatization also provides new resources to invest in product development.

Quality is a problematic concept with respect to cigarettes. When cigarettes are produced from high-grade tobacco leaves and packaged in appealing ways, they are marketed

as high-quality cigarettes. But all cigarettes—even those produced with the highest-grade leaves—harm the health of smokers and of non-smokers who inhale the smoke. All cigarettes have nicotine, tar and other toxic constituents, and the combustion produced during smoking creates a range of additional ill effects. There may be differences in the taste and smoothness of so-called high-quality cigarettes that make them more enjoyable to smoke, and they may have lower levels of tar and nicotine—at least in machine tests.[19] If privatization leads to improvements in the consumer appeal of cigarettes that leads more consumers to smoke, or existing smokers to smoke more because they are persuaded that the "quality" of the cigarettes is higher, health risks rise. Although consumers may believe themselves better off in the short-term, there are serious negative long-term consequences.

Turkey does not have a law requiring companies to reveal cigarette contents, and cigarettes produced in Turkey do not list nicotine, tar or other constituents on the packages. There are also no regulations restricting the level of these harmful contents in cigarettes. The Ukraine Ministry of Health issued an order in July 1997 (post-privatization) to reduce the tar level for filter cigarettes from 25mg to 15mg and for non-filtered cigarettes to 22mg per cigarette. Nicotine levels were to be reduced from 1.5 to 1.3mg for filter and non-filter cigarettes. In 1997, 74% of all cigarettes produced in Ukraine were unfiltered. This fell to only 39% in 1999, in response to the 1998 increase in the tax rate on non-filter cigarettes, bringing it to almost the same level as filtered cigarettes. Many experts believe it is desirable to mandate lower tar and nicotine content of cigarettes. However, this may not translate into health benefits, because of smokers' compensatory smoking behaviour.

Given the dubious nature of the concept of "quality" with respect to cigarettes, all that can be concluded about the possible impact of privatization on product appeal is that any benefits that consumers might perceive, are likely to result in worse rather than better health outcomes.

Results of the analysis

Studies in many countries show that privatization (particularly if it also involves introducing competition into an industry that has been under State monopoly) can bring economic benefits. These include greater efficiency, better management practices, new foreign investment and transfers of technology and technological improvements that increase productivity, and relieve the government from subsidizing loss-making enterprises. The data presented from Turkey and Ukraine suggest that at least some of these benefits have been achieved or are likely to materialize as privatization proceeds.

We also consider privatization from a public health perspective, asking whether it is likely to result in increased cigarette consumption and the mechanisms through which this effect may occur. Both Ukraine and Turkey did in fact experience consumption increases concomitant with the entry of private cigarette producers. We have explored various direct and indirect channels, and other important causal factors. It is not easy to disentangle the effects of ownership, market structure, and other market factors, but on the basis of our data and analysis, we conclude that the actions of private producers seem to have contributed to the consumption increase.

[19] Cigarettes that deliver relatively low tar and nicotine yields on testing machines may nonetheless deliver much higher levels to the lungs, etc. of smokers, because of the way smokers hold or draw on the cigarette.

Some political considerations concerning privatisation

Privatization agreements are often reached behind closed doors without any transparency. This has made it easier for international tobacco companies that have purchased State-owned cigarette enterprises to win significant concessions from governments. For example, there were exemptions from profit taxes for 5–10 years in Hungary, Kyrgyzstan and Ukraine. The Kyrgyzstan Government agreed to discuss tax adjustments with the private enterprises before making changes (which could compromise the Government's ability to raise taxes). It also guaranteed the company that it would be the sole producer in the country, replacing the State monopoly with a private monopoly.[20] Such concessions often seem to serve the interests of the investors much more than the interests of the country. The privatization process and agreements should be transparent, and it may be beneficial to draw on the services of independent third parties to help manage and negotiate a fair deal. Extended profit tax holidays, a common incentive for foreign investors, can involve very large amounts of foregone revenue for governments.

It is important that governments not allow private cigarette investors to dictate tobacco tax policy. Tobacco taxes are the most effective policy instrument that governments have to affect the level of consumption of tobacco products in the country. Furthermore, tobacco excise taxes can raise very large amounts of tax revenue. Because demand for cigarettes is inelastic, implying that the percentage fall in consumption is lower than the percentage increase in price, increases in tobacco taxes decrease consumption and increase total tax revenue at the same time. This is a win–win situation for the government budget and for public health. The level and structure of tobacco taxes that will best serve public health goals and the country's fiscal interests are likely to be considerably higher than the level of taxes that cigarette manufacturers will want to see.

Tobacco products kill half of all long-term users, and cause a high incidence of serious disease, resulting in a severe burden on families, society and the State. In order to minimize this harm, all governments should implement comprehensive tobacco control measures tailored to the situation and needs of the country, regardless of the ownership of cigarette enterprises.

As in other sectors, it is desirable that an appropriate regulatory framework be put in place before privatizing State-owned cigarette enterprises. This enables potential purchasers to assess more accurately the value of the enterprise and price they are willing to pay.

A regulatory framework should at least correct for the worst market failures, by including measures to adequately inform citizens of the health risks of tobacco use, protect non-smokers from exposure to second-hand smoke in public places and discourage children from being enticed by illusory and seductive advertising to start smoking. Such a decision they will probably regret and find extremely difficult to reverse once addicted to nicotine.

One of the starkest differences between the way that State tobacco monopolies and private tobacco companies operate, is the level of marketing and promotion. Typically, State monopolies undertake very little marketing, whereas the multi-national cigarette producers spend thousands of millions each year in highly effective marketing and promotion. A comprehensive ban on all tobacco product marketing and promotion, if necessary phased in over two to three years, during which counter-advertising can be required (as in South Africa),

[20] Various personal communications.

should be a key part of the regulatory framework for tobacco. Without a ban—or with only partial restrictions that leave open many channels through which companies can recruit new young smokers—countries risk a situation such as in Turkey, where impressionable young teenagers begin to smoke in very large numbers. This is a situation that is extremely difficult to reverse later, because nicotine has such a powerful addictive effect.

In addition to appropriate use of tobacco tax policy and bans on advertising and promotion, there are other key parts of a comprehensive set of tobacco policy measures. They are:

- good information for consumers on the health risks faced by tobacco users and non-smokers who inhale cigarette smoke, including clear, large and specific warnings on tobacco product packages and information on the benefits of quitting;
- bans on smoking in workplaces, hospitals, schools, public transportation, restaurants and other public places to protect children and other non-smokers from the harmful effects of inhaling second-hand smoke;
- help for smokers who wish to quit, including reasonable access to nicotine replacement products and other cessation therapies that have proved to be highly effective in improving the success rate of attempts to quit; and
- actions to deter, detect and penalize smuggling of tobacco products.

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Smuggling of tobacco products

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Abstract

The cigarette smuggling issue has risen to the top of the agendas of governments and international organizations. An estimated one-third of internationally exported cigarettes is lost to smuggling. Annually, governments lose an estimated $25–$30 thousand million due to cigarette smuggling. Studies of smuggling's impact show that when smuggled cigarettes account for a high percentage of the total sold, the average price for all cigarettes, taxed and untaxed, will fall, increasing sales of cigarettes overall. This presentation explores the causes of smuggling, recent legal court cases on cigarette smuggling, the industry's role and the different types of smuggling.

"Worldwide, only two-thirds of exported cigarettes appear as legal imports. The missing cigarettes are probably smuggled. Smuggled cigarettes represent a loss of tax revenue for governments and a public health problem. Smuggled cigarettes are sold at below-market prices. These cheaper cigarettes thwart national health policies that use price increases to reduce tobacco consumption, leading to greater tobacco consumption than would occur if they were not available. This is a cross-border problem that requires cross-border cooperation to solve." The United States Surgeon General, D. Satcher, 18 July 2001.

Is tobacco smuggling a health problem?

Taxation is considered one of the most effective measures for reducing tobacco consumption. Tobacco companies oppose such increases and with greater frequency are relying on the argument that higher taxes are an incentive for smuggling.

According to the industry, a rise in cigarette taxes will only reduce legal sales, but not total sales (legal and illegal sales combined). Smuggling will create less revenue for governments and even undermine health efforts to keep the number of smokers down. The black market also means less income for "serious" and "loyal" tobacconists and more opportunities for organized crime. The smuggling issue has now become the argument that the industry uses the most to counter the policy of those governments that want to reduce tobacco consumption through taxation.

There is another reason why smuggling poses a serious threat to public health. Smuggled cigarettes are sold at a lower price, making cigarettes available cheaply, thereby increasing consumption and undermining efforts to keep youngsters from smoking. A recent study among 50 male and 50 female smokers aged 25–40 years in two Edinburgh, Scotland health centres confirmed smuggling's negative health aspects. Respondents in the survey discussed the impact of smoking on their finances. Although they often commented that money for smoking would be found somehow, various conscious strategies were adopted to maintain smoking in difficult circumstances (Box 1).

Box 1. Strategies to maintain smoking consumption

- Purchase cheaper brands of cigarettes
- Switch to home-rolled cigarettes
- Engage in cross-border shopping
- Buy contraband products
- Try to reduce cigarette consumption to cut costs, in a small minority of cases.

According to the survey, smokers in deprived areas perceive a lack of support to help them to stop smoking. Cigarette and tobacco smuggling is, therefore, viewed positively by low-income smokers as a way of dealing with the growing costs of cigarettes. According to the authors, smuggling stimulates and maintains consumption through its low prices and serves to nullify one of the major planks of the tobacco control strategy of the Government of the United Kingdom—regular, above-inflation, increases in tobacco taxation (Wiltshire et al., 2001).

Smuggling makes top international brands available at affordable prices to low-income consumers and to image-conscious young people in developing countries where Western products are regarded as sophisticated and stylish.

A third reason for concern is that contraband cigarettes evade legal restrictions and health regulations, such as selling to minors, labelling requirements, and regulations on additives.

Finally, more smuggling of cigarettes also means more opportunities for organized crime networks in other areas such as drugs and may increase the general level of corruption in a country.

Is tobacco smuggling only the problem of developed or high-tax countries?

Earlier studies showed that tobacco smuggling defies apparent economic logic. Common sense might suggest that cigarettes would be smuggled from countries where they are cheap (e.g. southern Europe) to expensive countries (e.g. northern Europe), and that this is due simply to price differences between these countries, which is what the tobacco industry claims. Although this does happen, it is not the largest type of smuggling and in Europe, there is far more smuggling from north to south, not the reverse (Joossens and Raw, 1998).

In fact, smuggling occurs in all parts of the world, even in regions where taxes are low. One internal document of the tobacco company BATco (Global Five-year Plan 1994–1998, Bates number 50018206) estimated that 324 thousand million or nearly 6% of world cigarette sales of 5 400 thousand million in 1993 were duty not paid (DNP) cigarettes, an industry term for contraband. Eastern Europe and the South-East Asia and Western Pacific Regions accounted for the majority of this at about 85 thousand million each, though Western Europe was also significant at about 50 thousand million. In relation to total market sales, DNP volumes are largest in Eastern Europe (about 13%), Africa and the Eastern Mediterranean Region (about 12%), but are also significant in Latin America (about 9%) and Western Europe (about 7%). Western Europe has the highest prices in the world; in 1996 four to five

times higher than in Africa, the Eastern Mediterranean Region or Eastern Europe. Yet despite these high prices, smuggling is on average lower than in other regions of the world. In other words, cigarette smuggling is not caused principally by "market forces". It is supply driven, caused mainly by fraud through the illegal evasion of taxes.

Tobacco smuggling is an international problem. Its international implications are evident: it involves international brands, produced by multinational companies and distributed by criminal organizations, which operate in all parts of the world and are able to buy large amounts of tax-free cigarettes, which previously "disappeared" during their international transport. Some 30% of internationally exported cigarettes are lost to smuggling, which is a far higher percentage than most consumer goods that are internationally traded.

Are differences in the price of tobacco products the cause of smuggling?

There are mainly two types of smuggling: bootlegging and large-scale organized smuggling.

Their main differences can be summarized in the following way:

Table 1. Characteristics of the two types of smuggling

Characteristics	Bootlegging	Large-scale smuggling
Quantities	Thousands of cigarettes	Millions of cigarettes
Tax status	Duty-paid	Tax free
Investments	Small	Large
Organization	Individuals and gangs	Criminal networks
Caused by	Price differentials	Tax avoidance
Location	Transported to neighbouring countries or within a short distance	Transported short and long distances

Bootlegging involves the purchase of cigarettes and other tobacco products in low-tax jurisdictions in amounts that exceed the limits set by customs regulations for resale in high-tax jurisdictions. The number of cigarettes involved in this form of smuggling is relatively small compared to that involved in other forms of illegal smuggling. In general, bootlegging involves transporting cigarettes over relatively short distances (e.g. between neighbouring countries and other nearby jurisdictions). As with the legal activities, significant price differentials between jurisdictions create incentives for bootlegging.

Bootlegging is a problem in some regions of the world, but huge price differences among neighbouring countries are less common and the market share of bootlegged tobacco products is much smaller than the market share of large-scale smuggled tobacco.

In the United Kingdom, total lost revenue due to cigarette smuggling was £2 890 million in 2000. However, 20% of this is cross-channel smuggling or smuggling by air passengers (that is, bootlegging). The vast majority, 80%, is container smuggling (that is, large-scale smuggling).

Table 2. Revenue lost in the UK through all forms of tobacco smuggling
(£ million)

	1999	*2000*
Cross-channel smuggling of:		
Hand rolling tobacco	670	890
Cigarettes and other tobacco	320	470
Total cross-Channel smuggling of tobacco	985	1 360
Tobacco smuggling by air passengers, internet and parcel	110	120
Freight smuggling of cigarettes	1 600	2 300
Assessment of all forms of tobacco smuggling and evasion	2 700	3 800

Source: Primarolo, Dawn. Parliamentary answer. 7 March 2001, column 230W

Large-scale, organized smuggling, in contrast, involves the illegal transport, distribution, and sale of large consignments of cigarettes and other tobacco products, generally avoiding all taxes. This type of smuggling usually involves millions of cigarettes that are smuggled over long distances.

Large-scale smuggling is encouraged by the presence of criminal organizations and is a relatively sophisticated system for distributing smuggled cigarettes at the local level. It is hugely aided by a lack of control over the international movement of tax-free cigarettes. Large-scale organized smuggling is a major problem that is not caused by differences in the price of tobacco products.

Characteristics of large-scale cigarette smuggling

a) Tax-free cigarettes

Large-scale smugglers are not interested in legally purchasing cigarettes in a low-tax country to sell them illegally in a high-tax country. Large-scale smugglers transport containers of 10 million cigarettes and do not want to pay taxes (even low-taxes) on this quantity of cigarettes. Paying tax diminishes their profits and increases their risk of loss in case of confiscation of their goods. A container of 10 million cigarettes can be bought for US$ 200 000 but has a current fiscal value (import taxes, excise duties and VAT) in countries of the European Union of US$ 1 million to US$ 2 million. Large-scale smugglers operate in all parts of the world, since the container transport costs are small compared to the market value of their goods.

b) Transported 'In transit'

The most common way to buy tax-free cigarettes, is to buy cigarettes under the 'in transit' regime. Transit is a concession system aimed at facilitating trade. Its essence is to allow the temporary suspension of customs duties, excise and VAT payable on goods originating from or destined for a third country or both while under transport across a defined customs area.

An example will illustrate this. Cigarettes from the United States enter Belgium for onward transport to North Africa. In this case, the goods would be placed under a transit regime for transport by road from Belgium to Spain, whence they would be shipped to North

Africa. Provided the re-export of goods is confirmed, no taxes would be due in the European Union. Fraud occurs when the transit cigarettes do not arrive at their declared destination and are sold on the black market without being taxed (European Parliament, 1997).

c) Passed through a wide range of owners

Fraudulent transactions typically involve several separate buyers between the initial purchase of the cigarettes and their disappearance from legitimate circulation. The key point for a criminal is not to be discovered. One mechanism employed to render investigation as difficult as possible is to arrange for a consignment to pass through a bewildering range of owners in a short space of time. The object is to make the final owner untraceable, and to make the links between the successive owners as obscure as possible (European Parliament, 1997).

d) The presence of criminal networks

The 1997 annual report of the European Commission *Fight against fraud* notes that more than 50 criminal networks have been identified in the course of large-scale investigations of different kinds. Organized crime has its sights trained on high-risk products in which trafficking brings huge profits. The report describes how fast former torpedo boats and even an Ilyushin IL-76 transport plane have been used to ferry illegal consignments of cigarettes across Spanish borders. The crime syndicates adapt extremely well to the measures designed to combat their activities and are very flexible, both geographically and operationally, when it comes to using different methods of transport and different distribution and money-laundering networks.

Criminal networks specializing in cigarette smuggling operate more easily in countries where corruption is high, the control of the authorities is lax and commodities other than tobacco are also being smuggled. The countries worldwide with a high level of cigarette smuggling (over 30% of total sales) are not those with the highest prices or taxes, but mostly countries that score high on the corruption index of Transparency International, such as Colombia, Nigeria, Pakistan, Ukraine or Yugoslavia (Merriman et al., 2000).

In Europe, Montenegro's role has been a major concern (*Le Monde*, 2001). In a tobacco trade journal the situation in Montenegro has been described in the following way: "In the last decade, "Monte Negro" (black mountain) has turned into a big, lucrative Mercato Negro (black market). The so-called Adriatic tobacco route is considered to be one of the major cigarette smuggling channels in Europe, which contributes an estimated 60% of the annual income of Montenegro" (Tobacco reporter, 2000). A parliamentary inquiry has been launched in Montenegro into claims raised by the Croatian magazine *Nacional* that the Government is implicated in tobacco smuggling. The Government has denied the claim (*Sunday Times*, 22 July 2001). Italian officials have often complained to Montenegro's Government about lost revenue from cigarette taxes over the Adriatic in speedboats. Montenegro—and Serbia—to some extent—created economies revolving around the black market beginning in the early 1990s, when Yugoslavia came under an international trade embargo. The underground trade helped people survive the international trade sanctions, but made a privileged few enormously rich from revenue linked to black-market smuggling (*Associated Press*, 17 June 2001).

e) Distributed in unofficial outlets

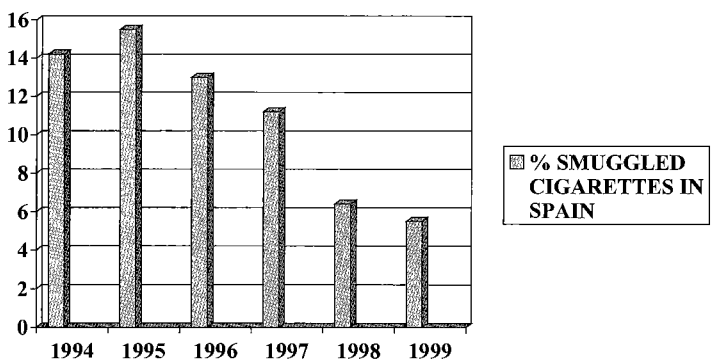
Large-scale smuggling also requires a willing market and a good local distribution network to which it can supply. Unregulated distribution networks, such as street vendors or unlicensed retailers, provide more opportunities to sell contraband cigarettes. It is mainly street selling, which is very common in developing countries that facilitates the distribution of illicit cigarettes.

How to reduce smuggling

The causes of smuggling depend on the type of smuggling: bootlegging is mainly caused by price differentials between neighbouring states and countries, while the incentives for large-scale smuggling appear to be more than the price alone. The public tolerance, the culture of street selling, the presence of organized crime and the complicity of the industry are also factors that determine the level of large-scale smuggling.

Spain is one of the few countries in the world that has tackled smuggling successfully. It did not do so by reducing tobacco tax. Despite Spanish cigarettes being among the cheapest in the European Union (EU) smuggled cigarettes had a market share of 15% in 1995. One of the sources of smuggled cigarettes in Spain and the EU was Andorra. In 1997 there was concerted action at national and European levels to reduce the supply of contraband cigarettes. Close collaboration between the authorities in Andorra, Britain, France, Ireland and Spain, and the European Anti-fraud Office (OLAF) reduced the supply of smuggled cigarettes from Andorra. Actions included sealing the Andorran border, civil guard brigades taking over the valleys and hills to hinder smuggling, and the EU and its Member States putting political pressure on the Andorran Government, which forced it to create new legislation that made smuggling tobacco into neighbouring countries illegal. As a result, contraband cigarettes, which accounted for 12% of the Spanish market in early 1997, only held 5% by mid-1999.

Figure 1.



Source: Ignacio Garcia, Customs & Excise, Madrid, personal communication

Legal cigarette sales increased from 78 thousand million in 1997 to 89 thousand million in 1998 and tax revenue increased by 25% in the same year (Jesus Lauzurica, Customs & Excise, Madrid, personal communication). According to the Spanish Customs authorities, their success was not due to controlling distribution at street level, which is

almost impossible, but to reducing the supply into the country at 'container level', through intelligence, customs activity and cooperation, as well as technology (Ignacio Garcia, Customs & Excise, Madrid, personal communication).

Table 3. Excise revenue from tobacco sales in Spain (thousand million Pesetas)

1996	447
1997	522
1998	653
1999	676

Source: Spanish Customs and Excise

Andorra is an important example because it illustrates the role played by the tobacco industry. Andorra was supplying illegal cigarettes not only to the Spanish market but also to the British market. Exports from the United Kingdom to Andorra increased from 13 million cigarettes in 1993 to 1 520 million in 1997. Few of these cigarettes were legally re-exported. Since Andorra's population is 63 000 and the country's smokers do not generally smoke British brands, either every Andorran, children and non-smokers included, was smoking 60 cigarettes a day in 1997 or these United Kingdom cigarettes were being smuggled out of Andorra. It seems obvious that the companies would know what was happening to their cigarettes. According to the chief EU fraud investigator Per Knudsen, "British tobacco manufacturers must have been aware that the sudden increase of the brands to Andorra could not be explained by the normal market, neither in Andorra nor in any of the neighbouring countries, simply because these brands are not widely sold outside the United Kingdom and Ireland."

While the Andorra case was very successful, the intervention also had its limits. The supply of British brands to Andorra has been displaced to another country. Cyprus has become the new Andorra for Britain's tobacco manufacturers. There has been a sudden huge increase of exports from the United Kingdom to Cyprus—from 89 million cigarettes in 1996 to 5 404 million in 2000 (Eurostat).

Exports from the British Tobacco Company Imperial Tobacco (producer of brands like Regal and SuperKings) increased by 40% from 1998 to 1999 to 16 500 million in 1999 (Imperial Annual Report). So while overall United Kingdom cigarette exports to Cyprus were increasing by 157% from 1998 to 1999 Imperial's exports were increasing by 40% and their international profits by 61%.

Responding to Belgian MEP Bart Staes during a session of the European Parliament (22 May 2001), Commissioner Schreyer stated that of the cigarette brands produced in the EU in 1999, those most often confiscated were, in order of frequency, Regal, SuperKings, West and Benson Hedges. Of those cigarette brands produced outside the EU, the cigarette brand most often confiscated was Marlboro.

European customs authorities estimate that in 1999 some 25% of all confiscated cigarettes in Europe are Regal and SuperKings, representing some 1.5 thousand million cigarettes.

If one accepts a seizure rate of 10%, this would mean that almost all the exported cigarettes from Imperial tobacco in 1999 (16.5 thousand million) were destined for the

smuggling market. Smuggling is a huge problem in the United Kingdom, as mainly domestic brands, such Regal and SuperKings were exported and became available to smuggling networks outside the country, who then brought them back into the country illegally.

Again, the question can be raised as to why Imperial Tobacco is exporting cigarette brands that are mainly smoked in the United Kingdom. As with Andorra, it is very unlikely that they did not know that most of their exports arrive on the illegal market in the United Kingdom.

Illicit sales and tax revenue

According to the tobacco trade report *World Tobacco 2002* a major feature of the world cigarette market is the continued growth in smuggling and counterfeit trade, which accounts for a minimum of 8% of the world cigarette consumption at around 400 thousand million pieces.

Smuggled tobacco products represent both a threat to public health and to government treasuries, which are losing thousands of millions of dollars or euros in revenue. The European Confederation of Tobacco Retailers has estimated the loss of revenue in the EU countries at Euro 5 thousand million in 1996. Four years later, the loss of revenue is estimated at around €10–12 thousand million (of which €6 thousand million in the United Kingdom) in the EU countries.

Smuggled cigarettes deprive governments of thousand millions of dollars in revenue and became a major concern for them and for international organizations such as the World Health Organization (WHO), the World Customs Organization (WCO), the World Bank, the International Monetary Fund and the International Criminal Police Organization (Interpol). At a conservatively estimated average tax of $1.25–1.50 per cigarette pack (this is much higher in most developing countries) cigarette smuggling (20 thousand million packs) accounts for a loss of $25–30,000 million for governments annually.

According to the World Bank Report (1999), smuggling is undoubtedly a serious problem, but the appropriate response to smuggling is not to reduce tax rates or forego tax increases. Instead, it is more appropriate to crack down on crime. According to the World Bank, the experience in Canada illustrates this point clearly. In the early 1980s and 1990s, Canada increased its cigarette taxes sharply so that the real price rose significantly. Between 1979 and 1991 teenage smoking fell by nearly two-thirds, adult smoking declined, and the cigarette tax revenues rose substantially. However, because of concerns about greatly increased smuggling, the Government cut cigarette taxes sharply. In response, the prevalence of smoking climbed in teenagers, and also increased again in the population as a whole. Meanwhile federal tobacco tax revenues fell by more than twice as much as predicted (World Bank, 1999).

Table 4. Revenue losses in EURO (VAT and excise duties, but not customs duties) as result of cigarette smuggling, based on smuggling estimates in 2000 and tax revenue in 1999 in some EU countries (€ = $0.90)

Country	Cigarette smuggling estimate in 2000	Revenue losses
UK	22-25%*	€6,000 million**
Italy	20%*	€1,730 million
Germany	8-12%*	€1,400 million
Spain	5%*	€250 million
Netherlands	7%	€140 million
Belgium	3-7%	€70 million
France	2%*	€170 million
Sweden	4-5%	€45 million
Ireland	15%*	€160 million

The estimates marked * are estimates from the European Confederation of Tobacco Retailers (CEDT).
The other estimates are based on other sources.

** The estimate for the UK includes all tobacco products and was made by the UK Customs & Excise, which estimated losses of revenue in 2000 at £3800 million. The other estimates are made by LJ.

Another example is Sweden. Like the other Scandinavian countries, Sweden has high cigarette prices and had a very low level of smuggling. However, two successive tax increases in December 1996 and August 1997 raised the price of a packet of cigarettes from 31 SEK (US$ 4.00) to 44.5 SEK (US$ 5.80). From an already high level the price of a pack of cigarettes was increased by 43% in a period of eight months (Joossens & Raw, 2001).

Table 5. Cigarette confiscation in Sweden

Year	Number (millions)
1993	6
1994	5
1995	6
1996	17
1997	39
1998	46
1999	32
2000	45

Source: Swedish Customs

However, the confiscation table shows the huge rise in cigarettes confiscated following the price increases. The Government became concerned that smuggling was increasing and becoming a problem, in addition to there being a lack of public support for the tax increases. As result, the parliament decided in 1998 to lower the taxes to the July 1997 level of 36.5 SEK (or US$ 4.80, still one of the highest rates in Europe). The results of the tax reduction seem subtler to date in Sweden than elsewhere, however there is a clear trend (Joossens & Raw, 2001).

Data on sales, prevalence and tax revenue in Sweden can be summarized by saying that tax increases are effective in reducing consumption and they do increase tax revenue. However, the reduction in tax cut down revenue and increased consumption, and thus was damaging in its effects. The data on confiscated cigarettes show that the smuggling problem does not disappear when tax levels are reduced and suggest that the damage done by trying to solve cigarette smuggling by cutting the tax may prove rather enduring. The level of confiscated cigarettes in 2000 is almost the same as the level in 1998.

The problem is that once the smuggling networks are in place, when governments then improve control measures, dealers may simply look to other suppliers and continue their activities. This will be discussed further on this paper. The Swedish experience certainly does not support the tobacco industry's argument for controlling smuggling by reducing taxes (Joossens & Raw 2001).

The role of the industry

According to the World Bank Report *Curbing the epidemic*, economic theory suggests that the industry itself will benefit from the existence of smuggling. Studies of smuggling's impact show that when smuggled cigarettes account for a high percentage of the total sold, the average price for all cigarettes—taxed and untaxed—will fall, increasing sales of cigarettes overall.

Despite its professed opposition to criminal activity, the tobacco industry benefits from smuggling in several ways.

- Smuggling stimulates consumption both directly (through the street sale of cheap cigarettes) and indirectly (through pressure to lower or keep down taxes);
- The threat of smuggling has also been used to avoid trade barriers or to force open new markets.

Since 1997, there have been several court cases and official investigations in different parts of the world, which have accused the industry of supplying the smuggled cigarettes or at least of being aware of the illegal destination of their products. For instance, a former British American Tobacco (BAT) executive was found guilty by the High Court of Hong Kong Special Administrative Region of China (Hong Kong SAR) for his role in an operation that smuggled cigarettes into China. In 1998, a major tobacco company was convicted for actively breaking the law to assist in a smuggling operation. An affiliate of RJ Reynolds International pled guilty to charges of helping smugglers illegally re-route export cigarettes into Canada. It is clear that more and more governments now feel that the tobacco industry has a case to answer in relation to smuggling. BAT is under investigation by the United Kingdom Government Department of Trade and Industry over tobacco smuggling. In recent years Canada, Colombian Governors, Ecuador, the European Community and ten EU Member States (Belgium, Finland, France, Greece, Germany, Italy, Luxembourg, the Netherlands,

Portugal and Spain) as well as Belize and have filed lawsuits against international tobacco companies for smuggling. In July 2001, a federal judge in the United States of America dismissed the cigarette-smuggling lawsuit filed by the European Commission, but a new lawsuit was filed in August 2001 on behalf of the European Community and ten EU countries (*Associated Press*, 2001)[1].

Other investigations continue, spurred on in part by internal industry documents released in various lawsuits brought against tobacco companies.[2]

According to the EU Complaint, the cigarette companies RJ Reynolds and Philip Morris control, direct, encourage, support, promote, and facilitate the smuggling of cigarettes into the European Community in a variety of ways, including but not limited to the following[3]:

- The Defendants sell cigarettes directly to persons or entities they know, or have reason to know, are smugglers, or to distributors who they know, or have reason to know, are selling the cigarettes to smugglers.
- The Defendants sell large quantities of cigarettes to entities or destinations or both even though the Defendants know, based on their own marketing studies, that the legitimate demand for cigarettes from those entities or destinations or both cannot possibly account for the orders made and the massive quantities delivered. Under these circumstances, the Defendants know that their cigarettes are being sold for illegal purposes.
- The Defendants knowingly label, mislabel, or fail to label their cigarettes so as to facilitate and expedite the activities of the smugglers.
- The Defendants provide marketing information to the distributors and to the smugglers so that the smugglers will order, purchase, sell, and distribute the cigarettes manufactured by the Defendants that are in greatest demand in the area of ultimate consumption of the smuggled cigarettes.
- The Defendants generate false or misleading invoices, bills of lading, shipping documents, and other documents that expedite the smuggling process.
- The Defendants engage in a pattern of activity by which they ship cigarettes designated for one port knowing that, in fact, the cigarettes will be diverted to another port so as to be smuggled.
- The Defendants make arrangements by which the cigarettes in question can be paid for in such a way as to be virtually untraceable.
- The Defendants make arrangements for the smuggled cigarettes to be paid for into foreign accounts, including Swiss corporations or Swiss bank accounts or both in an attempt to improperly utilize Swiss banking and privacy laws as a shield to protect the smugglers from government investigations concerning their activities.

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[1] http://ecf.nyed.uscourts.gov/cgi-bin/DocketSheet.pl?6835

[2] Consult, for instance, the web site of Action on Smoking and Health, www.ash.org.uk/smuggling/
Bates C, *Tobacco smuggling*, Submission to the House of Commons Health Select Committee, Action on Smoking and Health, London, 14 February 2000 or consult the report of Beelman M, Ronderos M, Schelzig E, International Consortium of Investigative Journalists, Centre for Public Integrity, http://www.public-i.org/story_01_013100.htm, *Major Tobacco Multinational Implicated in Cigarette smuggling, Tax Evasion, Documents Show*, Washington, 31 January 2000 and Marsden, W, et al., *Tobacco Companies linked to criminal organizations in lucrative cigarette smuggling*, 3 March 2001, www.public-i.org/story_01_030301.htm. Or *Campaign for Tobacco-Free Kids, Illegal pathways to illegal profits. The cigarette companies and international smuggling*, Washington DC, May 2001, http://tobaccofreekids.org

[3] http://www.nyed.uscourts.gov/pub/rulings/cv/2000/00cv6617cmp.pdf

- The Defendants have formed, financed and directed the activities of industry groups, in order to disseminate false and misleading information to Plaintiff and the public.

The cigarette companies often blame organized crime for the massive amount of cigarette smuggling worldwide. However, much of the organized criminal smuggling that accounts for the vast majority of all cigarette smuggling worldwide has occurred with the knowledge and assistance of the major cigarette companies themselves, and would not occur without the cigarette companies' compliance. These facts have been established largely through previously secret, internal cigarette company documents, which have become available through various lawsuits against the companies. The documents describe extensive knowledge, oversight, and support of smuggling by the transnational cigarette companies in numerous countries. At the same time, only a small portion of the smuggling-related documents uncovered to date have appeared in the press or elsewhere (Campaign for Tobacco-Free Kids, 2001).

Additional documents in the tobacco lawsuit document depositories that chronicle the companies' involvement in international cigarette smuggling may yet be discovered—and others may currently exist only in the cigarette companies' own files, if the companies have not already destroyed them. Cigarette company documents do not use the word "smuggling," but instead use euphemisms or code words for the activities whose meaning is clear. Where the paper record of cigarette company knowledge and participation in cigarette smuggling has been uncovered, cigarette company euphemisms or code words for smuggling are the norm (Campaign for Tobacco-Free Kids, 2001).

The most common euphemisms are:

- duty not paid (DNP),
- transit, and
- general trade (GT).

Several examples follow:

"With regard to the definition of transit it is essentially the illegal import of brands from Hong Kong, Singapore, Japan, etc., upon which no duty has been paid." (BAT letter dated 25 August 1989. BAT Bates No. 302000021)

"[The DNP market] is the volume of cigarettes produced in Venezuela, exported (mainly to Aruba) and re-entering Venezuela as transit plus transit cigarettes produced elsewhere (mainly Ecuador and Brazil)." (BAT internal document, file owner Keith Dunt, "Venezuelan Market Definitions and Assumptions", undated, BAT Bates No. 500025647)

"The imported segment [in Taiwan] has increased each year and penetration reached 32.6% in 1993. This figure includes legal imports which accounted for 6.7 billion in 1993...plus GT imports estimated at 7.6 billion (17.4% SOM [share of market])." (BAT internal document entitled "Review of Asia-Pacific Market," January 1995, BAT Bates No. 502628801)

What is striking in the internal industry documents, is the capacity of the industry to monitor and their intention to control both the legal and the illegal market. Some BAT insiders insist that with production codes marked on each cigarette packet, the company is quite capable of monitoring where its brands are finally sold. (*Sunday Times*, 22 July 2001)

Tobacco companies apply what they call an "end market control":

"End market control in its real sense means: to control the end market from the supplier down to the point of sales, etc. and to take influence on all trade levels to best serve the customers and our consumers." (BAT document 16 November 1994, Bates number 503869844)

"End market controls demand pack coding is specific to customer." (BAT document 2 February 1993, Bates number 500011807)

End market control implies even price control. Journalists from *The Economist* have seen documents that suggest that the big tobacco multinationals collude in fixing prices in as many as 23 countries:

"Perhaps the most extraordinary documents show the minutes of a meeting between managers from BAT and Philip Morris. (...) The minutes reveal that the executives discussed fixing prices in several Latin American countries, in both the legal and the 'DNP' market. DNP stands for duty not paid, i.e. smuggled." (The Economist, 2001).

In their internal documents, the industry acknowledges that end market control is more difficult in the illegal trade, but that the aim should be to apply the same end-market rules in all markets.

"But in the segments like the Duty Free and the transit business, these rules (end market control) sometimes cannot be applied dogmatically, but should be practised in a pragmatic way under the objective to help the BAT business grow and to meet and satisfy our customers' needs." (BAT document 16 November 1994, Bates number 503869844)

A clear example of end-market control has been shown in the EU legal case against RJ Reynolds, where the company undertook the necessary steps to prevent "unauthorized" smuggling in Spain.

Box 2. RJ Reynolds and unauthorized smuggling in Spain

" Spain has for many years been a primary destination for smuggled Winston cigarettes. The ultimate consumers in Spain demand cigarettes of the highest quality and wanted to be sure that they were receiving authentic American cigarettes. Additionally, various RJ Reynolds executives were paid money by smugglers to insure that these particular cigarette smugglers would not have other smugglers infringe on their territories.

As the demand for Winstons in Spain increased throughout the 1990s, growing numbers of lesser quality smuggled Winstons from other sources were being smuggled into Spain, thereby interfering with the authorized smuggling that was directed by the RJ Reynolds Defendants. In order to offset and prevent the unauthorized smuggling, the RJ Reynolds Defendants undertook certain steps. First, they developed a particular presentation of Winston cigarettes known to the Spanish consumer as "patanegra". Among other ways, the patanegra presentation could be distinguished from regular Winston cigarettes in that it contained certain distinctive markings and did not contain a blue sticker that was found on most Winston cigarettes.

(Box 2. continued)

The RJR Defendants produced the patanegra presentation specifically for their best smuggling customers so as to insure that they could maintain their competitive advantage over other smugglers and the RJ Reynolds Defendants could increase their market share. The patanegra presentation was developed specifically for the Spanish market and sold only in Spain.

The RJ Reynolds Defendants (Defendants) carefully controlled and monitored all the sales of their cigarettes in Spain, both smuggled and legally sold. Because of the way the Defendants mark and label their cigarettes, they identified RJ Reynolds cigarettes that were in the marketplace and that were smuggled into the country by persons without the authorization of the Defendants.

They also identified the distributor from whom those cigarettes were purchased. The Defendants control the distribution of smuggled cigarettes in the marketplace, and require their distributors to insure that the smuggled cigarettes are distributed only in the RJ Reynolds-designated markets. For example, when the Defendants detected a large volume of "unauthorized" smuggled cigarettes on the streets in Spain, they would purchase the entire load of unauthorized RJ Reynolds cigarettes. They would then return the cigarettes to the distributor who sold them, and require the distributor to reimburse the Defendants for the amount that they had paid on the street for the cigarettes. The distributors would then resell the cigarettes to a purchaser who would be counted on to smuggle the cigarettes to an authorized destination.

In some instances, smuggled cigarettes were seized by Spanish authorities. If these "unauthorized" smuggled cigarettes were seized by authorities and sold at auction, the Defendants would purchase those cigarettes at auction. The Defendants would then require the smugglers to reimburse the Defendants for 50% of the price that the latter had paid for the cigarettes at the auction. This was one of the ways in which the Defendants would punish smugglers for smuggling unauthorized cigarettes into Spain and thereby control the smuggling market."

Source: EU complaint against Philip Morris and RJR[4]

Discussion

Theoretical, empirical and descriptive evidence indicates that a number of factors contribute to cigarette smuggling. While tax levels and tax and price differentials are important factors, the evidence suggests that others, including the presence of informal distribution networks, organized crime, industry participation, and corruption, may be as, or more, important. In general, many of the factors that facilitate smuggling are more common in low-income and middle-income countries (Joossens, et al., 2000).

Plans to combat smuggling are taken at different levels. In the United Kingdom the Government considered tobacco smuggling as a serious threat to the revenue and to the Government's health objectives. The Government implemented its Tackling Tobacco Smuggling Strategy, which provided in 2000–2001 £209 million for investment in new equipment and extra front-line staff and investigators. In Europe close collaboration between

[4] http://www.nyed.uscourts.gov/pub/rulings/cv/2000/00cv6617cmp.pdf

EU Member States and the European Anti-Fraud Office (OLAF) has led to the reduction of the supply of smuggled cigarettes in Andorra and a reduction in cigarette smuggling in Spain. In the United States of America a plan was proposed to combat smuggling at global level. This plan contained a recommendation that all countries require licensing of manufacturers, importers, exporters and wholesalers of tobacco products. If tobacco products are tracked from the beginning of their journey, opportunities for smuggling will be diminished. According to the United States plan, an effective anti-smuggling programme will reduce crime, increase government revenue, and keep cheap tobacco out of the hands of consumers (Satcher, 2001). At global level the WCO and its 154 Members recently adopted a strategic plan to combat cigarette smuggling.

In order to strengthen international action to combat the epidemic, in May 1999 the WHO's 191 Member States unanimously adopted a resolution that paved the way for negotiations to begin on a WHO Framework Convention on Tobacco Control (FCTC), and this process is now well underway. Formal negotiations of the treaty commenced in October 2000 and the third session of the Intergovernmental Negotiating Body for the FCTC took place in November 2001. In the course of negotiating this treaty many countries have expressed support for strengthened international action to combat tobacco smuggling in the FCTC context. Some countries have also expressed interest in extending coverage of this issue to include measures to prevent the production and marketing of counterfeit cigarettes. A possible WHO protocol on smuggling should be considered as complementary to existing agreements and would require a close collaboration with other international organizations, such as the WCO and Interpol.

Provisions in the FCTC could require measures to improve the ability to trace the goods, such as markings on all packages of tobacco products identifying the origin and the final destination. A specific protocol could hold the manufacturer or exporter—usually the tobacco company—responsible for ensuring that cigarettes arrive legally in their end-user markets and be liable if the product ends up on the black market. A system of import and export licensing may be instituted. This sort of regime would require an important change for trading tobacco products during transit, but is clearly not unprecedented.

Liability regimes are already in place in conventions on small arms and light weapons, narcotics and psychotropic substances, and environmental treaties such ozone-depleting chemicals, pesticides, persistent organic pollutants, hazardous waste, and endangered species (Bloom, 2001). Provisions in the FCTC could contain a ban on duty free sales, which can serve as a source of smuggled cigarettes. The existence of large volume of duty-free tobacco products in international commerce creates opportunities for smuggling and in many legal actions on smuggling, duty free companies have also been accused to be part of the smuggling operations. There are two sources for tax-free cigarettes – duty-free and product in transit. Smuggling is caused by tax-free cigarettes that disappear during their international transport and that are classified in world trade statistics as missing. Smuggling is aided by the existence of tax-free zones and tax-free sales—large quantities may be sold legally from duty-free outlets to smugglers—but the responsibility to pay tax or to sell only modest amounts rests with the smuggler not the duty-free outlet. Traders have explained that part of these tax-free cigarettes are sold legally and are used for duty-free sales in airports or on ferries. (Förster & Husic, 2001) The end of all duty-free tobacco would mean that tobacco traders cannot use the duty-free sales argument to justify the increasing amount of disappearing cigarettes worldwide. In order to avoid "missing" cigarettes, no transport and sales of tax-free cigarettes should be tolerated.

Trade in weapons has been excluded from General Agreement on Tariffs and Trade and World Trade Organization jurisdiction since 1947. Narcotics and psychotropic substances have been dealt with exclusively under narcotics and psychotropic substances conventions of 1961, 1971 and 1988. Each of the environmental agreements provides for restrictions in trade, including a form of "discrimination" against countries that do not adopt relevant environmental agreements (Bloom, 2001). As the main cause of cigarette smuggling is an abuse of transit trade rules, similar rules affecting trade in tobacco products would seem to be a logical extension of the precedent set in environmental treaties.

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Annex II

Programme

Day 1 Monday, 3 December 2001

8:30–9:00 **Registration**

9:00–9:30 **Opening session**

- Welcome from Dr Yuji Kawaguchi, Director, WHO Kobe Centre
- Welcome from Mr Toshizo Ido, Governor of Hyogo Prefecture, Japan
- Welcome from Dr Vera da Costa e Silva, Project Manager, WHO/TFI

- Group photo

Session I: ***Burden of disease and effective tobacco control interventions***
[Plenary Session]

Co-Chairs: Dr Clara Foucault-Mohammed, ILO & Dr Douglas Bettcher, WHO

9:30–9:45 Current and future tobacco burden of disease
[Dr Vera da Costa e Silva, WHO]

9:45–10:00 Effective demand-side interventions to reduce tobacco use
[Dr Joy de Beyer, The World Bank]

10:00–10:45 Discussions

10:45–11:00 **Coffee break**

Session II: ***Supply-side implications from effective tobacco control interventions***
[Plenary Session]

Co-Chairs: Dr Ping Zhang, CDC & Dr Joy de Beyer, The World Bank

11:00–11:15 An overview of FAO tobacco work: objectives and progress
[Dr Brian Moir, FAO]

11:15–11:30 Tobacco leaf projections to 2010
[Professor George Mergos, University of Athens]

11:30–12:30 Discussions

12:30–14:00 **Lunch**

Session II (Continued)

14:00–16:15 Country Case Study: Reports and Discussion
- China [Dr Shangnan Shui, FAO]
- India [Mr Sat Pal Malhotra]
- Turkey [Dr Erol Cakmak, Middle East Technical University]
- Malawi and Zimbabwe [Dr Shangnan Shui, FAO]

16:15–16:30 **Coffee break**

16:30–17:00 CGE Studies [Dr Xinshen Diao, IFPRI]

17:00–17:30 Discussions

17:30–18:00 Further research issues and policy implications [Dr Brian Moir, FAO]

19:00 **Reception**

Day 2 Tuesday, 4 December 2001

Session III: Employment issues in tobacco manufacturing
[Plenary Session]

Co-Chairs: Dr Luk Joosens, WHO & Dr Brian Moir, FAO

9:00–9:15 Employment trends and prospects: the world tobacco industry
[Dr Gijsbert van Liemt, ILO]

9:15–9:30 An overview of the bidi industry in India: the scenario in selected States
[Dr Clara Foucault-Mohammed, ILO]

9:30–9:45 Alternative employment for bidi workers in India: An action project
[Mr Arun Kumar, ILO]

9:45–10:00 Smoking in the workplace: an occupational hazard
[Dr Carin Hakansta, ILO]

10:00–10:45 Discussions

10:45–11:00 **Coffee break**

11:00–12:30 Country case studies on "employment issues in tobacco manufacturing" and discussions
- Armenia [Dr Ashot Khurshudyan, ICHD, Armenia]
- Bulgaria [Dr Roska Ivanova Petkova, Bulgarian Academy of Sciences]
- Egypt [Professor Hebba Nassar, University of Cairo]
- Kenya [Professor Leopold Mureithi, University of Nairobi]
- Viet Nam [Dr Hoang Van Kinh, Hanoi Trade University]

12:30–14:00 **Lunch**

Session IV: Issues of employment, smuggling and privatization
[Working Group and Plenary Session]

14:00–15:30 Working Group Session

1) Working group I:

Employment

Co-Chairs:
Dr Clara Foucault-Mohammed, ILO &
Dr Gijsbert van Liemt, ILO

14:00–15:30
Discussions

2) Working group II:

Smuggling

Co-Chairs: Dr Douglas Bettcher, WHO

1. 14:00–14:15
Smuggling of tobacco products
[Dr Luk Joosens, WHO]

2. 14:15–14:30
Measures to control the smuggling of tobacco products
[Dr Austin Rowan, OLAF]

Privatization

Chair: Mr Ross Hammond,
The Rockefeller Foundation

3. 14:30–14:45
Privatization: Economic and public health implications
[Dr Ayda Yurekli, The World Bank]

14:45–15:30
Discussions

15:30–15:45 **Coffee break**

15:45–16:30 Reports from working groups *[Plenary Session]*

Chair: Dr Matthew Hodge, UNICEF

Session V: Policy implications and research agenda for tobacco control in the 21st century
[Plenary Session]

Co-Chairs: Dr Linda Waverly Brigden, IDRC & Dr Vera da Costa e Silva, WHO

16:30–17:30 Discussion of policy implications and research agenda

17:30–17:45 **Closing session**

List of participants

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