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Economics of Tobacco Control Paper No. 8

The Economics of Tobacco in Egypt

A New Analysis of Demand

Heba Nassar

March 2003

Tobacco Free Initiative
World Health Organization

HNP
HEALTH, NUTRITION, AND POPULATION
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HEALTH, NUTRITION AND POPULATION (HNP) DISCUSSION PAPER

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Health, Nutrition and Population (HNP) Discussion Paper

ECONOMICS OF TOBACCO CONTROL PAPER NO. 8

THE ECONOMICS OF TOBACCO IN EGYPT:
A New Analysis of Demand

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Paper prepared for the World Health Organization Tobacco Free Initiative, Eastern Mediterranean Regional Office

Abstract: This study examines the economics of tobacco production and demand in Egypt. It reviews previous studies of demand for cigarettes in Egypt, consumption tends in Egypt, in the context of regional trends, and the data on tobacco-attributable diseases in Egypt.. It describes the structure and trends in cigarette production in Egypt, and the level of imports and exports. Part 2 uses household expenditure survey data from 1995/96 and 1999/2000 to look at levels and trends in household expenditures on cigarettes and other tobacco products, by income level, education, rural/urban residence, works status and occupation. The same data are used to analyse the demand for cigarettes and other tobacco products in Egypt, estimating expenditure (income) and price elasticities for the various population subgroups. The results are comparable to similar empirical estimates from other countries. The elasticities are used to simulate the likely effect on consumption of a rise in the price of cigarettes. The results of a survey of knowledge, attitudes and behaviors with respect to tobacco use of 559 university students are reported. Finally, Egypt's tobacco control policies, activities and plans are described.

Keywords: tobacco, tobacco tax, cigarette tax, economics of tobacco, economics of tobacco control, smoking, tobacco policy, price elasticity, expenditure elasticity, income elasticity, demand for cigarettes, shisha, tobacco employment, Egypt, knowledge, attitudes and behaviors on smoking, University students, tobacco use prevalence

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FOREWORD

In 1999, the World Bank published "Curbing the Epidemic: governments and the economics of tobacco control", which summarizes the trends in global tobacco use and the resulting immense and growing burden of disease and premature death. By 1999, there were already 4 million deaths from tobacco each year, and this huge number is projected to grow to 10 million per year by 2030, given present trends in tobacco consumption. Already about half of these deaths are in high-income countries, but recent and continued increases in tobacco use in the developing world is causing the tobacco-related burden to shift increasingly to low- and middle-income countries. By 2030, seven of every ten tobacco-attributable deaths will be in developing countries. "Curbing the Epidemic" also summarizes the evidence on the set of policies and interventions that have proved to be effective and cost-effective in reducing tobacco use, in countries around the world.

Tax increases that raise the price of tobacco products are the most powerful policy tool to reduce tobacco use, and the single most cost-effective intervention. They are also the most effective intervention to persuade young people to quit or not to start smoking. This is because young people, like others with low incomes, tend to be highly sensitive to price increases.

Why are these proven cost effective tobacco control measures -especially tax increases- not adopted or implemented more strongly by governments? Many governments hesitate to act decisively to reduce tobacco use, because they fear that tax increases and other tobacco control measures might harm the economy, by reducing the economic benefits their country gains from growing, processing, manufacturing, exporting and taxing tobacco. The argument that "tobacco contributes revenues, jobs and incomes" is a formidable barrier to tobacco control in many countries. Are these fears supported by the facts?

In fact, these fears turn out to be largely unfounded, when the data and evidence on the economics of tobacco and tobacco control are examined. The team of about 30 internationally recognized experts in economics, epidemiology and other relevant disciplines who contributed to the analysis presented in "Curbing the Epidemic" reviewed a large body of existing evidence, and concluded strongly that in most countries, tobacco control would not lead to a net loss of jobs and could, in many circumstances actually generate new jobs. Tax increases would increase (not decrease) total tax revenues, even if cigarette smuggling increased to some extent. Furthermore, the evidence show that cigarette smuggling is caused at least as much by general corruption as by high tobacco product tax and price differentials, and the team recommended strongly that governments not forego the benefits of tobacco tax increases because they feared the possible impact on smuggling, but rather act to deter, detect and punish smuggling.

Much of the evidence presented and summarized in "Curbing the Epidemic" was from high income countries. But the main battleground against tobacco use is now in low- and middle-incomes countries. If needless disease and millions of premature deaths are to be prevented, then it is crucial that developing counties raise tobacco taxes, introduce comprehensive bans on all advertising and promotion of tobacco products, ban smoking in public places, inform their citizens well about the harm that tobacco causes and the benefits of quitting, and provide advice

and support to help people who smoke and chew tobacco, to quit.

In talking to policy-makers in developing countries, it became clear that there was a great need for country-specific analytic work, to provide a basis for policy making, within a sound economic framework. So the World Bank and the Tobacco Free Initiative of the World Health Organization (as well as some of the WHO regional offices and several other organizations, acting in partnership or independently) began to commission and support analysis of the economics of tobacco and tobacco control in many countries around the world.

The report presented in this Economic of Tobacco Discussion Paper makes a valuable contribution to our understanding of the issues and likely economic impact of tobacco control in a specific country-setting. Our hope is that the information, analysis and recommendations will prove helpful to policy makers, and help result in stronger policies to reduce the unnecessary harm caused by tobacco use.

Joy de Beyer

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EXECUTIVE SUMMARY

This study examines the economic questions that Egyptian policymakers are likely to address when considering tobacco control policies. In particular, it studies the impact of tobacco product price increases and of changes in per capita incomes on the demand for tobacco products. Data from the Central Agency for Public Mobilization and Statistics (CAPMAS) household surveys (1995/96 and 1999/2000) was used to analyse demand for cigarettes and other tobacco products in Egypt and to estimate what the impact would be on consumption of an increase in the prices of tobacco products. In addition, results of a new survey of university students are reported. They were asked about their perceptions towards smoking, smoking habits and expenditures, and their views on effective methods for reducing smoking.

There are six parts to the study. Part one is a general overview; part two is an analysis at the household level of expenditures on tobacco in Egypt; and part three reports on expenditure and price elasticity estimates using data from the household surveys in 1995/96 and 1999/2000. Part four presents the results of a simulated price increase on consumption. Part five reports on interviews with over 500 Cairo university students, and the last part describes tobacco control measures in Egypt.

Total tobacco product consumption in the Middle East and in Africa increased by 24.3% and 3.6%, respectively from 1990 to 1997, while it has decreased in other areas of the world. Egypt has the highest rate of tobacco consumption in the Arab world. Cigarette consumption in Egypt increased from 12,027 million sticks in 1970 to 51,814 million sticks in 1997. The number of smokers in Egypt has increased over twice as fast as the population growth rate over the past 30 years. However per capita consumption declined between 1990 and 1995 in response to cigarette price increases. The trend has been reversed by a policy of price freezes, and as a result of rising incomes.

Smoking has a definite economic cost to Egypt. The direct annual cost of treating diseases caused by tobacco use is estimated at LE 3 billion. As in other countries, the percentage of all cancer deaths attributable to tobacco consumption increased from 8.9% in 1974 to 14.85% in 1987 among men. Among women, the proportion is still relatively low, but increasing smoking rates among women threatens their future health.

The public sector has a monopoly on cigarette production in Egypt. Egypt's tobacco industry is dominated by the Eastern Tobacco Company (ETC), the largest cigarette manufacturer in the Middle East. Employment in tobacco industry increased from 13,100 workers in 1970 to 17,900 in 2000, or 1% of total employment. Tobacco growing is banned in Egypt, so the country imports large amounts of raw tobacco, mostly from India and China, as well as from Brazil, Italy, Syrian Arab Republic and the United States. A small but growing volume of cigarettes are imported, and Egyptian cigarettes are exported to neighbouring countries, mostly to serve Egyptians working in other countries.

The analysis of the household expenditure data in part three shows a small decrease in total expenditures on cigarettes relative to total expenditures from 5.86% to 5.14% between the 1995/96 and 1999/2000 household budget surveys, but an increase in expenditures on other

tobacco products as a percentage of total expenditures. Health and education campaigns do not appear to be having much impact. Expenditure elasticities indicate that tobacco products are "normal" commodities, in that expenditures increase as income rises. However, the values of expenditure elasticity (income elasticity) are less than 1 (very low in particular for urban tobacco expenditure), indicating that any change in consumption of cigarettes and tobacco due to a change in income would be small, whether upwards or downwards.

The price elasticities of cigarettes are -0.397, -0.412 and -0.385 at the national, urban and rural levels according to the data of 1999/2000. This means that each one percent increase in the price of cigarettes causes consumption to fall by about 0.4%. With the exception of the highest income quartile in urban areas, price elasticity is higher for higher income quartiles than for the poorer quartiles, indicating that the richer quartiles are more responsive to price changes than the poorer quartiles. This is contrary to the predictions of economic theory and to empirical studies in other countries. Comparison of the price elasticities for all income categories in 1995/96 and 1999/2000 shows a slight increase in the price elasticity, indicating that the demand for tobacco has become more sensitive to changes in price; price changes would be more effective in affecting consumption than before.

Part 4 reports on a simulation of the impact of price increases on the consumption of cigarettes. The data for 1995/96 and 1999/2000 show clearly that a price increase will lead to a significant reduction in consumption. Government revenues will increase when prices increase because the percentage change in consumption is smaller than the percentage change in price (demand is price inelastic). The more inelastic the commodity is, the greater the increase in total revenues will be when taxes/prices rise. Cigarettes as an inelastic commodity are a perfect case for an excise tax.

In part 5, the results of interviews in April 2001 with 559 Cairo University students are presented. The data showed that 51% of males and 12% of females had ever smoked, and 22% of males and 2% of females currently smoked. The relatively low smoking rate among females represents a cultural taboo rather than a positive choice of healthy behaviours and may understate prevalence, because many young women may be reluctant to admit to smoking. Among those who smoked cigarettes, 85.2% smoked *nargila* (water pipe) as well, with the percentage equally high for men and women, which is a new phenomenon among young women in Egypt.

On average, most students had smoked for 5 years (males) and 4 years (females), with an average starting age of 19 years for the males and 20 years for the females. There was no clear relationship between likelihood of smoking and working status of the parents, but children of parents who had worked abroad were more likely to smoke. The percentage of smokers was lower among those who graduated from a language school (they are from a higher socio-economic class, being able to afford private education) and highest among those from public schools.

Among current smokers, 74% of males and 40% of females smoked every day. Males on average smoked 14 cigarettes per day, with the highest intensity reported being 40 cigarettes a day; females smoked 6 cigarettes per day on average, and even the heaviset smoker reported smoking 10 a day. The average amount spent per month on cigarettes was LE 63 for males, with

a range from LE63 to LE 250; women spent LE66 on average with a range from LE20 to LE 120 per month. The average price per pack paid by men was LE 3.2 per pack and slightly higher at LE 3.7 per pack for women, who tended to be from higher socio-economic groups. Most -- 82%-- of the students interviewed who smoked wanted to stop.

Egypt has a number of laws and regulations which prohibit smoking in public places, bans advertising on television and radio (but allows it in print, on billboards and at the point of sale), requires a (weak) health warning label on cigarette packs and print advertisements, and sets maximum limits on tar content. There are many ways that tobacco control legislation could be strengthened. Moreover, enforcement is poor, further undermining policies intended to reduce tobacco product use. Recently, a national tobacco control coordinating committee has been formed, a national tobacco control program developed, campaigns (especially targeting youth) stepped up, and specific disease-reduction targets set within the Health Egyptians 2010 program. It is a start, but much more remain to be done if deaths and disease from tobacco use are to be prevented. In particular, cigarette prices need to be raised, a complete and comprehensive ban on all advertising and promotion should be enacted and enforced, smoking bans in public places and work places could be expanded and need to be enforced, and much more could be done to help smokers who want to quit.

PART 1. GENERAL OVERVIEW

1. INTRODUCTION

Tobacco consumption is one of the greatest public health threats in the 21st century. WHO estimates that there are 4.9 million tobacco-attributable deaths each year, which is about 7% of all deaths. The number of deaths is rising fast, especially in developing countries where the number of tobacco users has been increasing. By about 2025, ten million deaths per year will occur, 3 million of which will be in developed countries and 7 million in developing countries. Tobacco addiction starts early in life. Every day 80,000 to 100,000 youths become regular smokers.

2. REGIONAL TRENDS IN TOBACCO CONSUMPTION

The negative effects of tobacco on health will increase substantially in the Eastern Mediterranean Region because of a marked increase in cigarette consumption as indicated in Table 1. About half the region's adult men and about 10% of adult women are current smokers. The prevalence for men is considerably higher than in western Europe and north America but lower than in some countries in Asia. The prevalence for women is lower than for women in western Europe and north America but higher than for several large Asian countries. Tobacco consumption by volume in the Middle East and in Africa increased by 24.3% and 3.6%, respectively from 1990 to 1997, while it has decreased in most other areas of the world: South America and Caribbean (-16.5%), North America (-7.6%), Western Europe (-5.9%), Eastern Europe (-5.0%) (Corrao et al, 2000). Because of the marked increase in cigarette consumption in the Middle East, the effects of the tobacco epidemic will increase substantially. Evidence shows that an increase in deaths due to lung cancer and other tobacco-related diseases will occur 20-30 years after an increase in tobacco consumption.

Table 1. Trends in regional cigarette sales, 1990-97 (percentage change by volume)

Region	% change
South America and Caribbean	-16.5
North America	-7.6
Western Europe	-5.9
Africa	-5.0
Asia and Pacific	+3.6
Middle East	+8.6

Source: Tobacco Control Country Profiles, American Cancer Society, 2000.

3. THE EGYPTIAN ECONOMY

Egypt has gone through several economic changes since the 1970s. After eight years of marked improvement in the external resource position between 1974 and 1980/81, oil-related sources of foreign exchange started to decline. As a consequence the resource gap increased to 11% of GDP by 1985. Egypt became one of the most heavily indebted countries in the world in terms of the absolute size of external debt, and among the five countries with the highest debt-to-GDP ratio

(World Bank, 1988). Sectoral growth rates slowed, agricultural output stagnated after 1980/81, labour absorptive capacity fell and industrial sector growth rates declined from 7.4% on average between 1973 and 1981/82 to 5% in 1984/85. Hence, the Egyptian government undertook major economic structural adjustment policies (ERSAP) to reduce the budget deficit and balance of payment deficit and to enhance economic growth. These measures were strengthened in 1990.

Table 2. Economic indicators for Egypt, 1993/94 to 1999/2000

Major economic indicator	93/94	94/95	95/96	96/97	97/98	98/99	99/2000
Real economy							
Nominal GDP at market price (LE billions)	175	204	229	256	280	302	339
Real GDP at market price (LE billions)*	145	156	164	173	271	287	305
Real GDP growth rate	3.9	4.7	5.0	5.3	5.7	6.1	6.5[1]
Real GDP per capita growth rate (%)	1.9	2.5	2.9	3.4	3.7	3.7	4.2
Share of private sector in gross domestic product (%)	63.3	64.3	65.5	68.8	70.7	74.9	73.1
Unemployment rate (%)	9.8	9.6	9.2	8.8	8.3	7.9	7.4
Average annual inflation rate (%)	9.1	9.4	7.3	6.2	3.8	3.8	2.8
Gross domestic savings (% of GDP)	15.1	15.0	12.7	14.5	15.7	15.6	16.4
Gross domestic investments (% of GDP)	16.6	16.2	16.1	17.7	19.5	19.9	19.8
External sector							
Trade balance (% of GDP)	-14.2	-13.1	-14.1	-13.5	-14.3	-14.1	-11.7
Total exports (% of GDP)	6.5	8.2	6.8	7.1	6.2	5.0	6.5
Total imports (% of GDP)	20.6	21.3	20.9	20.6	20.5	19.1	18.2
Current account balance (% of GDP)	0.8	0.6	-0.3	0.2	0.2	-1.9	-12
Overall balance of payments (% of GDP)	4.1	1.3	0.8	2.5	2.5	-2.4	-3.1
Total revenues	30.0	27.3	26.5	25.2	24.4	24.3	23.5
Total expenditures	32.2	28.6	27.9	26.1	25.4	28.5	27.1
Overall balance of payments to gross domestic product ratio	-2.1	-1.3	-1.3	-0.9	-1.0	-4.2	-3.6
GDP (LE billion)	175.0	229.4	229.4	256.3	280.2	302.0	338.6

Source: Ministry of Economy, Economic Bulletin, 2000.

The economic stabilization programme helped reduce the budget deficit from 5.5% of GDP in 1991/92 to 3.1% in 1999/00. Budgetary expenditures were cut by 11.2% of GDP between 1991/92 and 1997/98. Much of the weight of expenditure reduction fell on government investment, which fell 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.

Overall investment reached 19.8% in 1999/2000. Growth resumed by the mid-1990s as private investment started to pick up. GDP growth in 1997/98 was estimated at 5.7% with greater investment in industry, which was growing faster than agriculture and the services sector in general. Growth of real per capita GNP also increased to nearly 3.5% for 1997/98 and 4.2% in 1999/2000 compared with zero growth in 1990/91. In a very short space of time, the stabilization efforts succeeded in correcting major macroeconomic imbalances and in bringing down the inflation rate from nearly 20% to 2.8% in 1999/2000. It also corrected important distortions in the economy (such as negative real interest rates) and built up a sizable cushion of foreign exchange reserves.

The accelerated rate of growth of GDP per capita masks an unemployment rate that was kept at 7.4% in official estimates and 11.8% in other surveys in 1998 as well as a shortage in productive employment opportunities, a deficit in the trade balance accounting for -11.7% of GDP and in the balance of payments (-3.1% in 1999/2000) and a balance of payments deficit reaching -3.9% of GDP and a deficit in the budget amounting to 3.1% of GDP in 1999-2000 (Nassar H, 2001).

4. REVIEW OF SELECTED TOBACCO STUDIES IN EGYPT

A study of the economic consequences of smoking in Egypt by Dr Sherif Omar (Omar, 1989) was undertaken in 1989. The study starts with an overview of the performance of the tobacco industry in 1984/85 in Egypt. The tobacco industry employed around 1% of the labour force engaged in industry, which was approximately 2.5% of the labour force employed by the industrial public sector. Of these, 6.7% were female. Total annual wages generated by direct employment in the tobacco industry represented l.6% of the wages from the industrial sector and 2.6% of wages in the public sector.

Cigarette production was 47.5 billion cigarettes in 1984/85, and had increased by 124% over the previous 10 years. Cigarettes exports were limited, but increased from l43 million cigarettes in l974 to 4l6 million cigarettes in 1985/86. The main markets for Egyptian exports were Kuwait, Qatar, Saudi Arabia, Dubai, Tunis, Cairo airport and the free zone. Exports faced major barriers in the Arab countries because of reduction in oil revenues, anti-smoking campaigns and limitations on nicotine content of products. Export prices were lower than local prices because cigarette exports were subsidized.

The study reported that because prices for tobacco products were set by the government the Eastern Tobacco Company faced significant financial difficulties. It did not consider the effect of prices on consumption and government revenue. Advertising expenditure by the tobacco industry was minimal. It was estimated that 20% of adults used tobacco products. On average, each family whether urban or rural, spent approximately 5% of its income on tobacco products- more than spending on medical care, culture or sports.

The main contribution of this study was a calculation of the costs of smoking, including health care costs, lost income and lost productivity from tobacco-attributable premature mortality. The total cost to society was estimated at LE 188.8 million for 1989.

Health care costs (outpatient and inpatient costs) for treating three of the main diseases linked to smoking -- lung cancer, ischaemic heart disease, and chronic bronchitis and emphysema-- were calculated. Total annual absenteeism was estimated at just over 3 million days. These diseases were estimated to cause 6.62% of all deaths. On average, the deaths were estimated to reduce lifespan by 30 years, and to reduce an individual's productive years by one third. The associated income loss to families was estimated to amount to LE 20 million in 1981/82. Since families would receive 80% of the income in the form of pensions, the net loss to households was LE 4 million, the other LE 16 million being borne by the public purse. The loss of gross value added which the economy suffered due to early death linked to smoking diseases totalled LE 52.5 million (using average productivity of year 1981/82).

The study also reported the results of a 1988 survey of a subsample of 100 families, drawn from a 1986 survey of 1000 families, which found that:

- over the 30 months between the surveys, 17% of male smokers said they had quit, whereas there was no significant percentage of females who quit;
- smoking prevalence of males decreased from 39.8% (1000 family survey) in 1986 to 30.7% (100 family survey) in 1988;
- smoking prevalence among females increased from 1% to 2.3%.

A study by Kazem (1995) used tax simulation modelling to assess the effect of a price increase due to an excise tax rise on government revenue, the company revenues and the present value of company. Price and income elasticities of demand were estimated, and used to project consumption and company and tax revenues for 1995-2000. The study found that in Egypt cigarettes were price-inelastic (-0.3) and income-elastic (1.02), which agrees with the theory of demand for cigarettes in developing and developed countries, and is similar to estimates found in other countries. The implication is that cigarettes are a normal commodity, and consumption rises as income increases and falls when the real price increases.

The study examined two different policy scenarios for the government. In scenario 1, the price increased by the rate of inflation (9%), and government tobacco revenues grew at a uniform rate of 4%, the rate of growth of GDP. In scenario 2, the excise tax rose by 10 piastres (LE 0.1). Supply is assumed to be perfectly elastic, so all of the tax increase is passed on to consumers. In both scenarios, government revenue and company revenue grew by 5.9% in 1993 and by 6.2% in 1994. The study concluded that scenario 1would generate higher revenues and share values for the company.

Clearly these two studies are outdated and leave many important questions on tobacco policy unanswered. The present study meets the need for a new analysis of the impact of the increase in price on tobacco consumption in Egypt.

5. SMOKING PREVALENCE IN EGYPT

Table 3 shows the size of the population in Egypt projected to 2050. Adults age 15 and over are almost two thirds of the population, half of whom are females with a relatively lower consumption rate of tobacco due to cultural habits. Urbanization is expected to increase over the coming twenty years to reach 62.2% in 2025.

Table 3. Population in Egypt (millions)

	1995	2000	2025	2050
All adults, aged 15+	38.453	44.274	72.639	91.719
All youth, aged 0-14	23.829	24.196	22.976	23.125
% Urban	44.8	N.A	62.2	N.A
% Rural	55.2	N.A	37.8	N.A

Source: United Nations Population Division 1998

Egypt has the highest rate of tobacco consumption in the Arab world. Cigarette consumption increased from 12,027 million sticks in 1970 to 51,814 million sticks in 1997 (Figure 1). The number of smokers in Egypt has increased over twice as fast as the population over the past 30 years. Per capita consumption declined between 1980 and 1990, continued to decline until 1994 and then rose steadily until 1998 (Figures 2 and 3).

Figure 1. Annual total cigarette consumption, Egypt, 1970-2010 (sticks in millions)

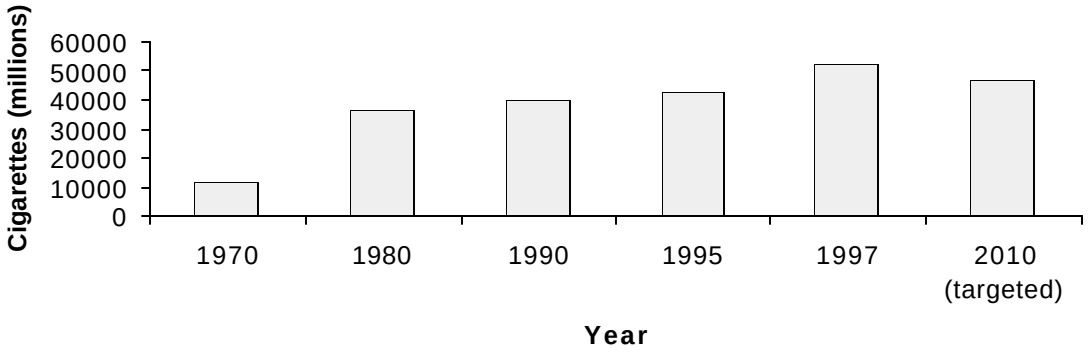
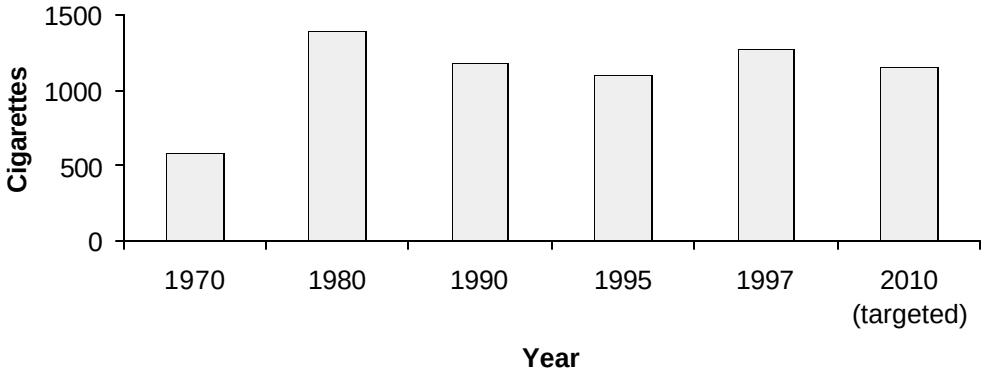
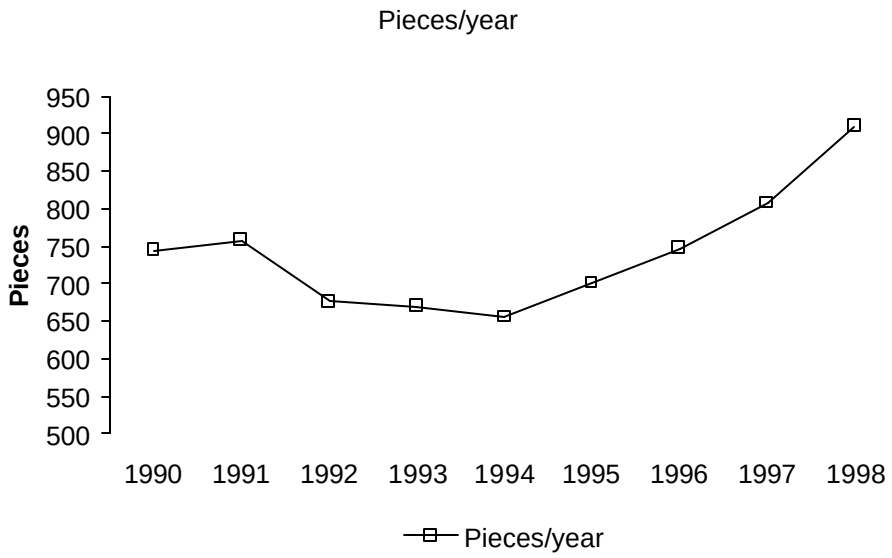


Figure 2. Annual cigarette consumption per capita, Egypt, 1970-2010



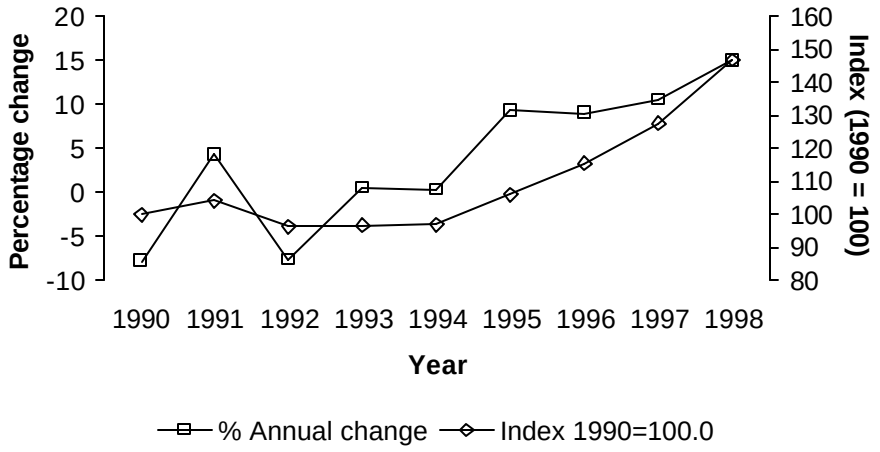
Source: Annex Table A1.1.

Figure 3. Per capita consumption of cigarettes, pieces per year, 1990-98



Source: Annex Table A1.3.

Figure 4. Annual change in cigarette consumption, Egypt, 1990-98



Source: Annex Table A1.2.

Price trends are thought to be the main factor behind the trends in per capita consumption, with income trends also playing a role.

- Price hikes in June 1989, April 1990, and three rises in 1991 helped bring about a 7.7% drop in sales at a time when the economy itself was slowing.
- Consumption growth since 1992 can be explained by packaging quality improvements and a freeze in cigarettes' prices since October 1991, when the Egyptian government proclaimed that cigarettes were a strategic commodity. In real terms, cigarette prices have been falling since late 1991.
- A rise in GDP growth from 1.7% in 1993 to 4.6% in 1995 and a fall in inflation to 8.3% in 1995 also fuelled sales, which increased by 9.3% in 1995, 9.0% in 1996, and 10.5% in

1997 (a year in which average incomes rose by 15%) and 15.0% in 1998.

Another factor in the increase of tobacco consumption in Egypt is increasing consumption of foreign cigarettes, partly the result of Egypt's open door policy and trade liberalization (Annex A1.7). The market share of foreign cigarettes rose from 4.8% in 1990 to 16.3% in 1999, with much of the increase being for Philip Morris cigarettes.

According to the World Health Organization, in the early 1990s, price increases of manufactured cigarettes led to increased use of hand rolled cigarettes, nargilas and other types of water pipe (using tobacco blended with molasses and sometimes flavourings such as apple, mint and citrus). Approximately 8,000 tonnes of tobacco (typically with high tar and nicotine content) are consumed annually in water pipes and hand-rolled cigarettes. This accounts for about one-third of all tobacco consumption. About two-thirds of the tobacco consumed in Egypt is in the form of manufactured cigarettes. Eastern Tobacco Company's most popular brands sell for between US$ 0.44 and US$ 0.50, and locally manufactured foreign brands cost about US$ 1.10 per pack.

Current data suggest that smoking prevalence is an increasing public health problem in Egypt. It has been reported that the number of smokers is increasing by 8% per year. Among professional groups, smoking prevalence is highest among teachers (45%) and doctors (43%). In 1997 prevalence was estimated at 43.6% among adult males and 4.8% among adult females, and 13.2% among adolescent males (14-18 years old) and 3.3% among young women aged 14-18 (Table 5). Cultural restrictions on smoking by women are likely to cause under-reporting, so that actually prevalence is higher than surveys indicate. Observers note that increasing numbers of women and teenagers are smoking, and that there has been a recent marked increase in the number of young Egyptian women who smoke tobacco in water pipes in cafes and restaurants.

Table 5. Smoking prevalence rates, males and females, 1997, 1998

Cigarette consumption (male, over 18 years), 1997	43.6%
Cigarette consumption (female, over 18 years), 1997	4.8%
Smoking prevalence (male, 14-18 years), 1998	13.2%
Smoking prevalence (female, 14-18 years), 1998	3.3%

Source: National Cancer Institute and Ministry of Education

According to the Ministry of Health and Population, there are an estimated 13 million smokers in Egypt (20% of the population over the age of 15), who consume 60 billion cigarettes annually.

6. SMOKING-RELATED DISEASES IN EGYPT

Smoking has a definite economic cost to Egypt. The direct annual cost of treating diseases caused by tobacco use in Egypt is estimated at LE 3 billion. Consistent with the tobacco epidemic experience in other countries, the percentage of all cancer deaths from tobacco consumption increased from 8.9% in 1974 to 14.9% in 1987 among men. Among women, the proportion is still relatively low. WHO reports that smoking causes 90% of the lung cancer cases in Egypt.

Table 6. Smoking-related diseases in Egypt

Disease	Males 35+		Females 35 +	
	Number of deaths	Rate (incidence per 100,000)	Number of deaths	Rate (incidence per 100,000)
Tracheal, lung and bronchial cancer	704	11.0	287	3.8
Lip, oral cavity and pharyngeal cancer	71	1.1	38	0.5
Respiratory disease	5 468	91.2	4 039	57.0
Ischaemic heart disease	6 697	109.2	3 945	55.8
Stroke	8 945	153.3	8 969	127.6
Other diseases of the circulatory system	31 054	527.5	30 920	439.6
All causes	138 968	2305.1	12 404	1753.0

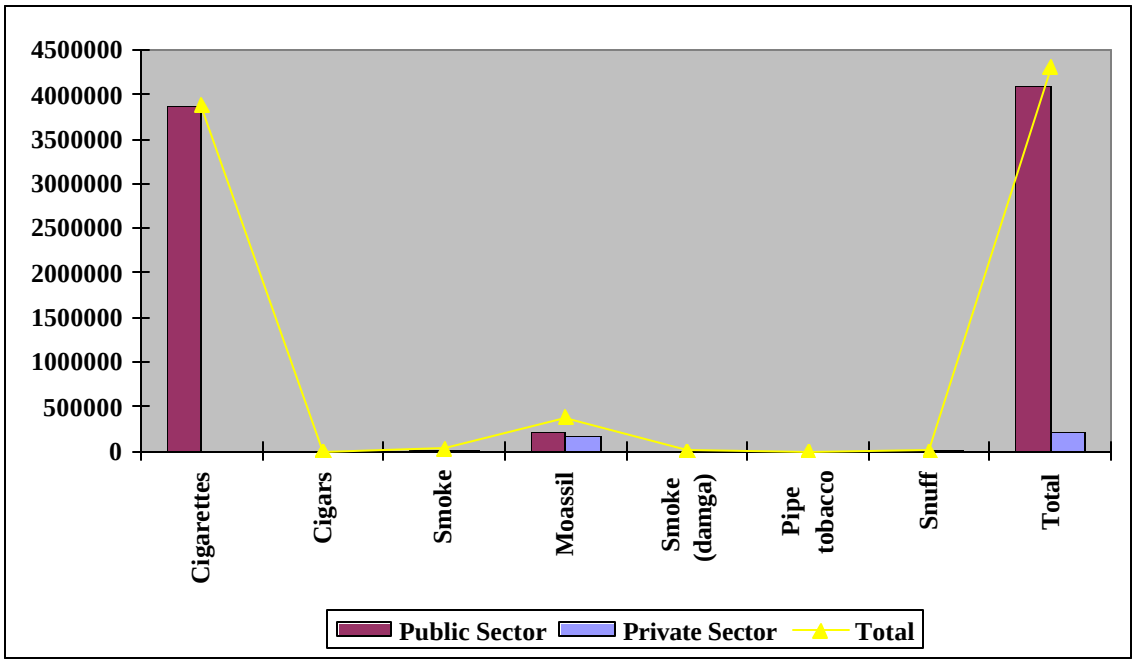
Source: World Health Organization, 1998.

7. The Tobacco Sector

Cigarette production and employment

There are 29 tobacco companies in Egypt (Annex Table A1.4). The public sector dominates production (Figure 5). The Eastern Tobacco Company (ETC), a joint stock company established in 1920, nationalized in 1956, and partially privatised during the 19902, is the largest cigarette manufacturer in the Middle East. It controls about 92% of the Egyptian market, although it is beginning to lose ground to Philip Morris. ETC seven cigarette factories, and in 1996 sold 45 thousand million cigarettes domestically and exported 1 thousand million. Domestic cigarette brands comprise over 95% of ETC's production, with its Cleopatra brand accounting for about 80% of total production. Other domestic brands include Boston and Corona. ETC also produces 21 international brands such as Marlboro, Merit, Silk Cut, Camel, Kansas, Winston and Kent under licensing agreements with Philip Morris, British American Tobacco (BAT), Japan Tobacco and Gallaher. Under these agreements, the companies provide ETC with the raw materials and are charged a fee of US$ 5 per 1000 cigarettes, bringing in US$ 21 million a year.

Figure 5. Production of tobacco by sector, Egypt, 1997/98



Source: Annex Table A1.5.

Both the public and private sectors import and process tobacco. About two-thirds of all tobacco used in Egypt goes to manufacture cigarettes. The remaining third is used for *moassil* or water-pipe tobacco production and fine-cut tobaccos, all of it processed by private sector companies. Most water-pipe tobacco is a blend of dark fire-cured or air-cured tobaccos (about 20%) with other tobaccos, mainly burley, and molasses. Production of fragrant water-pipe tobacco has been rising in the last few years.

Most domestic brand cigarettes use a blend of about 50% flue-cured tobacco, 25% burley tobacco and 25% oriental tobacco. The ETC is a highly price-conscious buyer. As a result, to the extent possible, it will substitute lower-cost burley and flue-cured tobaccos from other sources for US tobaccos. ETC prefers to keep enough tobacco leaf in stock to cover about 2 years of production, but in 1998/99, stocks were at less than half this level.

In the 1990s, the Egyptian government invested in new packaging equipment and began purchasing higher quality leaf. ETC introduced a number of new brands, including a 10-cigarette packet priced at about US$ 0.25, which is reportedly very popular. ETC's 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.

Production levels were fairly steady between 1990, with small falls of 4.3% in 1992 and 2.5% in 1993 in response to a decline in domestic demand, From 1995, production began to increase strongly and reached 60 thousand million pieces in 1998, a 50% increase since the first half of the 1990s (Table 7).

Table 7. Production of cigarettes, 1990-98

Years	Million pieces	Annual change (%)	Index (1990 = 100)
1990	39.837	-7.8	100.0
1991	41.800	+4.9	104.9
1992	40.000	-4.3	100.4
1993	39.000	-2.5	97.9
1994	39.000	0	97.9
1995	42.401	+8.7	108.4
1996	46.000	+8.5	115.5
1997	54.800	+19.1	137.6
1998	60.000	+9.5	150.6

Source: Ministry of Health and Population in Egypt, National Smoking Programme, FY 2000-01.

Employment in the tobacco industry increased from 13,100 workers in 1970 to 15,800 in 1980, 17,500 in 1990, 17,261 in 1995 and 17,900 in 2000 - 1% of total employment (Annex Table A1.5). These workers are employed on a full-time basis by the industry and work in production, services and distribution.

Tobacco trade

Tobacco cultivation has been banned in Egypt since the 1800s, although small areas of tobacco are illegally cultivated in the Upper Nile region, primarily for home use. The ban makes Egypt an important importer of unprocessed tobacco. Tobacco imports increased by 162% between 1996 and 1998, to reach over 55,000 tonnes. Egypt imports a large amount of inexpensive tobacco from India and China. Brazil, Italy, Syrian Arab Republic and USA have also been important sources of leaf. According to presidential decree 351 of 1986, as amended in 1989 by presidential decree 205, import tariffs on tobacco are as follows: unmanufactured leaf: LE 9.00/kg for private sector imports, and LE 6.10/kg for public sector imports (US$ 1 = LE 3.43 as of July 2001; US$ 1 = LE 4.64 in March 2003). Tariffs are rebated on exports of cigarettes and water-pipe tobacco.

Cigarettes imports are relatively small but growing. Prior to being banned in 1986 in order to conserve foreign exchange and protect ETC, imports stood at 1,905 million pieces. The ban was lifted at the beginning of the 1990s, and imports reached 500 million pieces by 1997 (Table 8). In 1993, import costs of tobacco products amounted to US$ 143.8 million (0.9% of total imports). High levels of import duty and established licensed production have acted as import barriers to some extent. Most imports (90%) come from the USA, most of the rest are from the UK.

Table 8. Imports of cigarettes, Egypt, 1990-97

Year	Million cigarettes	As % of consumption
1990	90	0.2
1991	110	0.3
1992	110	0.3
1993	160	0.4
1994	243	0.6
1995	327	0.8
1996	350	0.8
1997	500	1.0

Source: Ministry of Health and Population, Egypt, National Smoking Programme, FY 2000-01.

Egypt has increased its cigarette exports to neighbouring countries in recent years. Most exports go to Saudi Arabia, Republic of Yemen and other GCC countries, where they are consumed mostly by Egyptian expatriate workers. Cigarette exports jumped over 1,000% between 1985 and 1992, from 200 million to 2,424 million pieces, as a result of strong sales to eastern Europe, Libyan Arab Jamahiriya and Saudi Arabia. Sales fell back to 1.26 billion pieces in 1994, and 1.1 billion pieces in 1996 before recovering to 1.3 billion pieces in 1997 (<http://www.cdc.gov/tobacco/who/egypt.html>. ETC also exports about 1,300 tonnes of water-pipe tobacco to these countries.

Tobacco sales

Tables 9 and 10 show the increase in sales over the period 1992-99 of Cleopatra cigarettes and other brands.

Table 9. Sales of Cleopatra brand, Egypt, 1994-99 (million cigarettes)

Brand	1994/95	1995/96	1996/97	1997/98	1998/99
Soft packets					
Cleopatra king size	35,600	38,701	42,133	42,902	31,303
Cleopatra regular	0	0	0	2091.2	342
Cleopatra super king	4,376	3,965	3,318	32,750	9,446
Cleopatra menthol	0	0	0	0	3
Total	39,976	42,666	46,452	48,269	41,093
Cartons					
Cleopatra lights box	106	97	202	310	593
Cleopatra super box	56	48	43	15	51
Cleopatra box (20)	11	927	1,188	1,564	4,098
Cleopatra box (10)	0	0	0	0	420
Total	172	1,072	1,433	1,889	5,162
Total sales	40,148	43,738	47,884	50,157	46,355
Million packets	2,007	2,187	2,394	2,508	2,313

Source: ETC marketing sector/sales services sector statistical department.

Table 10. Sales volumes, selected cigarette brands, 1992-99 (million cigarettes)

Brand	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99
Paper packets							
Port Said king size	23	20	18	15	1	0	0
Boston king size	0	131	346	36	.1	0	0
Hollywood king size	0	0	0	124.1	43.3	15.8	3.9
Belmont Super	524	458	45	386	12	0	1,464
Capital Super	15	14	7	5	1	0	0
Capital	0	0	0	0	0	0	3

Source: ETC marketing sector/sales services sector, statistical department.

PART 2. ANALYSIS AT THE MICRO LEVEL

1. HOUSEHOLD SURVEYS

This analysis in this section is based mainly on information obtained through household income, expenditure and consumption surveys (HIECS) for 1995/96 and 1999/2000, conducted by the Egyptian Central Agency for Mobilization and Statistics (CAPMAS). The surveys were based on census sample frames, and used stratified multiple stage sampling. Households were randomly and systematically chosen, producing representative national samples of households, covering all 26 governorates of Egypt.

The 1995/96 HIECS included 14,805 households, of which 6,622 were in urban and 8,183 in rural areas. In 1999/2000, the total sample was 47,949 households, of which 28,754 were in urban and 19,195 in rural areas (Table 11). The questionnaire design and administration were similar in both surveys, so they allow relatively robust comparisons and trend inferences. They record information on household income and consumption expenditure on more than 600 items of goods and services, and are therefore a good source of information on the distribution of expenditure within different income groups.

The quality of the expenditure survey data for 1999/2000 and 1995/1996 can be judged "better than average" (El Laithy, 2001). However, due to poorly delineated field maps, the samples can only be considered approximately self-weighted-the samples selected were approximately proportionate to the household count in urban and rural governorates in the 1986 census for 1995/96 survey and the 1996 census for the 1999/2000 survey. The extent of undercoverage of squatter and nomadic populations cannot be determined. The sample size for both surveys was large enough to allow for inferences at the regional and governorate levels, with the exception of border governorates, where the sample size was small. Levels of bias and imprecision for both surveys were within statistically acceptable margins.

Table 11. Household expenditure surveys, Egypt, 1995/96 and 1999/2000

	1995-96		1999-2000	
	Households	Individuals	Households	Individuals
Urban	6,622	28,911	28,754	125,287
Rural	8,183	45,028	19,195	100,830
Total	14,805	73,939	47,949	226,117

Source: household budget surveys, 1995-96, 1999-2000.

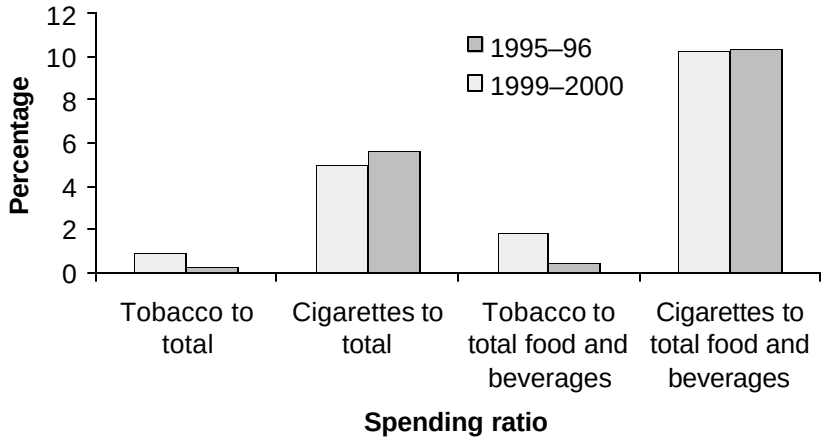
Each survey was administered over 12 months, with 10 visits to each household over one month. Basic information about all household members was collected. This information included age, sex, education, occupation, economic activity, employment status and housing conditions. A household diary was kept for one full month, in which all consumption expenditure transactions for all household members were recorded. Expenditure on food items included imputed value of self-produced commodities where these had market equivalents. An annualized sum of monthly or quarterly household expenditure was used to construct the consumption basket for total household expenditure. For 1995-96, budget shares were calculated for 635 distinct expenditure

groups, which rose to 714 separate groupings in 1999-2000.
Monthly household expenditure data on eight tobacco products were collected, which was then converted to an annual expenditure. Tobacco product data referred to expenditures and not quantities. Moreover, expenditure on tobacco was recorded at the household level, but no distinction made between smokers and non-smokers within household.

2. EXPENDITURE ON TOBACCO FROM HOUSEHOLDS SURVEYS

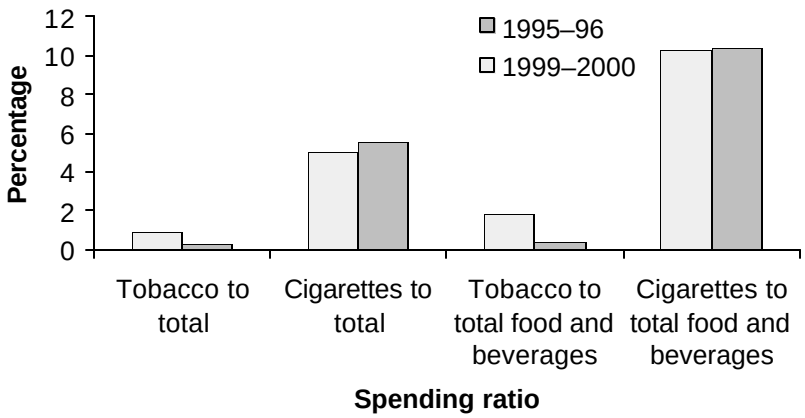
It is important to note that in this part the analysis considers only households which bought tobacco and not all households. In both urban and rural areas, there was a small fall in expenditures on cigarettes relative to total expenditures, and a clear rise in expenditures on tobacco and *tombak* relative to total expenditures, comparing the surveys for 1995/96 and 1999/2000 (Figures 6 and 7, note that the bars on the left hand side are from the **later** survey).

Figure 6. Urban households tobacco expenditure, 1995/96 and 1999/2000



Source: household budget surveys, 1995-96, 1999-2000.

Figure 7. Rural households tobacco expenditures, 1995/96 and 1999/2000



Source: household budget surveys, 1995-96, 1999-2000.

Tobacco expenditure relative to total expenditure by educational level

Tables 12 and 13 indicate clearly the negative relationship between consumption of cigarettes and educational level of the head of household at the national level and in urban areas in 1995/96 and 1999/2000. This can be explained by two factors: the low level of income of those from low educational levels and the low health awareness of low educational groups. However in rural areas, there was no clear relationship between tobacco consumption and educational and income level .

Table 12. Household tobacco expenditure by education of head of household, 1995/96

Spending ratio	Illiterate	Read and write	Primary certificate	Secondary certificate	Post-secondary	University graduate	Post-graduate	Total
TOTAL %								
Cigarettes to total food and beverages	11.08	12.05	12.17	12.92	12.74	12.25	15.27	11.83
Tobacco to total food and beverages	0.50	0.34	0.20	0.13	0.25	.002	0	0.33
Cigarettes to total	6.01	6.09	5.85	6.02	5.27	4.79	4.65	5.86
Tobacco to total	0.27	0.17	0.09	0.06	0.11	1.001	0	0.166
URBAN %								
Cigarettes to total food and beverages	14.28	14.64	12.81	13.09	13.27	12.32	15.66	13.69
Tobacco to total food and beverages	0.28	0.30	0.16	0.11	0.039	0	0	0.19
Cigarettes to total	7.10	6.88	5.93	8.86	4.96	4.64	4.63	6.14
Tobacco to total	0.14	0.14	0.073	0.049	0.015	0	0	0.085
RURAL %								
Cigarettes to total food and beverages	9.79	10.19	11.20	12.69	11.82	12.03	8.32	10.38
Tobacco to total food and beverages	0.59	0.37	0.28	0.16	0.64	0.01	0	0.45
Cigarettes to total	5.51	5.45	5.71	6.26	6.03	5.52	5.34	5.59
Tobacco to total	0.33	0.19	0.14	0.08	0.33	0.006	0	0.24

Source: Household budget survey, 1995/96.

Table 13. Household tobacco expenditure by education of household head, 1999/2000

Spending ratio	Illiterate	Read and write	Primary certificate	Second certificate	Post secondary	University graduate	Post-graduate	Total
TOTAL %								
Cigarettes to total food and beverages	11.39	11.95	13.22	13.43	12.92	14.07	15.55	12.57
Tobacco to total food and beverages	1.76	1.3	0.89	0.69	0.65	0.370	1.0	1.15
Cigarettes to total	5.5	5.34	5.51	5.37	4.98	4.1	3.41	5.14
Tobacco to total	0.85	0.58	0.37	0.28	0.25	0.11	0.22	0.47
URBAN %								
Cigarettes to total food and beverages	13.72	13.65	14.06	13.94	13.15	15.11	15.77	14.07
Tobacco to total food and beverages	1.18	0.89	0.74	0.56	0.48	0.31	1.205	0.74
Cigarettes to total	6.18	5.7	5.63	5.31	4.85	4.17	3.41	5.21
Tobacco to total	0.53	0.37	0.3	0.21	0.18	0.09	0.23	0.28
RURAL %								
Cigarettes to total food and beverages	9.6	10.07	11.13	12.23	12.21	11.3	11.26	10.29
Tobacco to total food and beverages	2.2	1.76	10.28	1.0	1.17	0.88	0	1.79
Cigarettes to total	4.91	4.88	5.17	5.54	5.45	4.63	3.34	5.00
Tobacco to total	1.12	0.85	0.6	0.45	0.52	0.36	0	0.86

Source: Household budget survey, 1999/2000.

Expenditure on tobacco as a percentage of total expenditure by work status

Table 14 shows that households expenditures on cigarettes and tobacco as a percentage of total expenditures were highest in 1995-96 for people in urban areas who were unemployed and for people in rural areas who were classified as family workers. This indicates a high prevalence of smoking among young urban people as most of the unemployed are young. High relative expenditures on tobacco and cigarettes also reflects low total expenditures and incomes of several of the work status categories.

Table 14. Households tobacco expenditure by work status of head of household, 1995/96

Spending ratio	Wage earner	Employer	Self-employer	Family labour	Recent unemployed	Long-term unemployed	Out of labour force	Total
TOTAL %								
Cigarettes to total food and beverages	12.15	10.34	11.52	14.29	31.76	12.69	14.03	11.83
Tobacco to total food and beverages	0.25	0.45	0.26	0.32	0	0	0.45	0.33
Cigarettes to total	5.91	5.24	5.88	8.55	12.9	7.46	6.8	5.86
Tobacco to total	0.12	0.23	0.12	0	0	0	0.22	0.17
URBAN								
Cigarettes to total food and beverages	13.63	12.5	13.13	11.75	31.76	13.17	15.25	13.69
Tobacco to total food and beverages	0.15	0.28	0.23	0.3	0	0	0.18	0.19
Cigarettes to total	6.11	5.17	6.36	6.18	12.9	8.19	7.08	6.14
Tobacco to total	0.07	0.11	0.11	0	0	0	0.08	0.09
RURAL %								
Cigarettes to total food and beverages	10.84	9.42	10.28	16.03	0	12.02	11.98	10.38
Tobacco to total food and beverages	0.34	0.52	0.29	0.35	0	0	0.9	0.45
Cigarettes to total	5.71	5.28	5.47	10.38	0	6.54	6.27	5.59
Tobacco to total	0.18	0.29	0.15	0	0	0	0.47	0.24

Source: Household budget survey, 1995/96.

The household budget survey of 1999/2000 showed almost the same results, with a high expenditure by the unemployed on cigarettes and tobacco relative to total expenditure (Table 15). This again demonstrates increasing numbers of smokers among unemployed young people, which might reflect their social and economic frustration.

Table 15. Household tobacco expenditure by work status of head of household, 1999/2000

Spending ratio	Wage earner	Employer	Self-employment	Family labour	Unemployed	Total
TOTAL %						
Cigarettes to total food and beverages	12.79	11.1	12.85	7.67	14.57	12.58
Tobacco to total food and beverages	9.93	1.65	1.26	1.35	0.87	1.16
Cigarettes to total	5.19	4.52	5.67	4.29	5.77	5.14
Tobacco to total	0..38	0.67	0.56	0.75	0.34	0.47
URBAN						
Cigarettes to total food and beverages	13.87	13.7	13.72	6.17	15.23	14.07
Tobacco to total food and beverages	0.61	1.05	1.06	0.93	0.6	0.74
Cigarettes to total	5.21	4.5	5.77	4.0	5.8	5.2
Tobacco to total	0.23	0.34	0.45	0.61	0.23	0.28
RURAL %						
Cigarettes to total food and beverages	10.86	9.0	11.51	8.5	11.96	10.29
Tobacco to total food and beverages	1.25	2.15	1.56	1.58	1.91	1.79
Cigarettes to total	5.16	4.55	5.49	4.42	5.58	5.00
Tobacco to total	0.71	1.09	0.74	0.82	0.89	0.87

Source: Household budget survey, 1999/2000.

Tobacco expenditures by occupational status of head of household

Tables 16 and 17 show the relative expenditure on cigarettes and tobacco by economic activity of the head of household in 1995/96 and 1999/2000. The different activities are classified as follows:
1 = agriculture and fishing, 2 = mining, 3 = manufacturing, 4 = electricity and gas, 5 = construction, 6 = trade and restaurants, 7 = storage and transportation, 8= finance and insurance, 9 = personal and social services, 10 = unclassified activities, 11 = inapplicable.

The highest expenditure on cigarettes and tobacco as a share of total expenditures was among those working in construction (5), trade and restaurants (6), and transportation and storage activities (7). These categories are to a large extent the lowest-wage occupations.

Table 16. Relative expenditure of households on tobacco by economic activity of head of household, 1995/96 (%)

Spending ratio	1	2	3	4	5	6	7	8	9	10	Total
Total											
Cigarettes to total food and beverages	9.21	9.25	12.89	10.46	13.71	12.08	13.08	12.25	12.11	14.06	11.83
Tobacco to total food and beverages	0.52	0.02	0.26	0.07	0.25	0.28	0.22	0.03	0.19	0.45	0.335
Cigarettes to total	5.20	3.89	6.24	5.10	6.56	5.56	6.27	4.85	5.77	6.82	5.86
Tobacco to total	0.29	0.007	0.13	0.04	0.12	0.13	0.11	0.014	0.09	0.22	0.17
Urban											
Cigarettes to total food and beverages	10.51	12.68	14.21	14.69	14.79	12.49	13.63	11.93	13.24	15.28	13.69
Tobacco to total food and beverages	0.54	0.036	0.18	0	0.16	0.24	0.2	0	0.16	0.17	0.19
Cigarettes to total	5.17	4.14	6.54	7.15	6.69	5.49	6.29	4.85	5.71	7.09	6.14
Tobacco to total	026	0.012	0.08	0	0.07	0.1	0.09	0	0.07	0.08	0.09
Rural											
Cigarettes to total food and beverages	9.12	6.49	10.84	7.87	12.26	11.19	12.37	13.08	11.15	12.01	10.38
Tobacco to total food and beverages	0.52	0	0.39	0.12	0.39	0.36	0.25	0.12	0.22	0.91	0.45
Cigarettes to total	5.2	3.55	5.71	3.87	6.37	5.73	6.24	4.84	5.82	6.28	5.59
Tobacco to total	0.29	0	0.21	0.06	0.2	0.18	0.13	0.05	0.11	0.47	0.24

Source: Household budget survey, 1995/96.

Table 17. Relative expenditure of households on tobacco by economic activity of head of household, Egypt, 1999/2000 (%)

Spending ratio	1	2	3	4	5	6	7	8	9	10	Total
Total											
Cigarettes to total food and beverages	11.35	13.01	13.33	13.61	13.93	13.54	13.75	12.51	12.26	12.41	12.58
Tobacco to total food and beverages	1.57	0.87	0.76	0.92	1.05	1.1	0.91	0.86	0.79	1.25	1.16
Cigarettes to total	5.12	5.21	5.14	5.75	5.45	5.10	5.59	4.81	4.66	5.35	5.14
Tobacco to total	0.71	0.35	0.29	0.39	0.41	0.42	0.37	0.33	0.3	0.54	0.47
Urban											
Cigarettes to total food and beverages	14.13	13.5	13.86	13.94	14.68	14.22	14.4	13.63	13.6	13.55	14.07
Tobacco to total food and beverages	0.81	0.64	0.59	0.89	0.8	0.93	0.75	0.52	0.4	1.04	0.74
Cigarettes to total	5.54	5.21	5.13	5.75	5.23	5.07	5.58	4.73	4.65	5.57	5.21
Tobacco to total	0.32	0.24	0.22	0.37	0.29	0.33	0.29	0.18	0.14	0.43	0.28
Rural											
Cigarettes to total food and beverages	9.32	11.01	11.32	12.3	12.53	11.21	12.17	10.72	10.08	9.97	10.29
Tobacco to total food and beverages	2.13	1.4	1.46	1.03	1.49	1.69	1.28	1.39	1.41	1.7	1.79
Cigarettes to total	4.72	5.21	5.21	5.77	5.94	5.28	5.63	4.97	4.68	4.81	5.0
Tobacco to total	1.08	0.66	0.67	0.48	0.71	0.79	0.59	0.64	0.66	0.82	0.87

Source: Household budget survey, 1999/2000.

Tobacco expenditures by household annual expenditure level

The economic aspect of smoking is clear from Tables 18 and 19, which show that the relative expenditure for smoking is higher among lower expenditure groups, both in 1995/6 and in 1999/2000. This indicates that smoking presents an economic burden and that the availability of income is crucial in determining the level of expenditures on tobacco products.

Table 18. Household tobacco expenditures by household expenditure level, 1995/96 (%)

Spending ratio	<1200	1200-	3200-	5600-	10 000-	14 000-	Total
Total							
Cigarettes to total food and beverages	10.31	7.68	7.11	6.26	5.10	3.59	5.86
Tobacco to total food and beverages	0.08	0.35	0.16	0.19	0.14	0.09	0.17
Cigarettes to total	17.48	13.95	12.96	12.01	10.8	9.74	11.83
Tobacco to total	0.13	0.63	0.29	0.37	0.3	0.26	0.33
Urban							
Cigarettes to total food and beverages	0	9.49	8.58	6.95	5.48	3.74	6.14
Tobacco to total food and beverages	0	0.03	0.11	0.1	0.08	0.04	0.09
Cigarettes to total	0	18.55	16.77	14.3	12.42	10.54	13.69
Tobacco to total	0	0.06	0.22	0.21	0.19	0.12	0.19
Rural							
Cigarettes to total food and beverages	14.12	6.97	6.38	5.73	4.55	3.14	5.59
Tobacco to total food and beverages	0.1	0.47	0.18	0.26	0.23	0.25	0.24
Cigarettes to total	24.11	12.32	11.24	10.44	8.81	7.69	10.38
Tobacco to total	0.18	0.83	0.32	0.48	0.44	0.60	0.45

Source: Household budget survey, 1995/96.

Table 19. Household tobacco expenditures by household expenditure level, 1999/2000 (%)

Spending ratio	-1200	3200-	5600-	10 000-	14 000-	Total
Total						
Cigarettes to total food and beverages	15.49	14.52	12.39	11.66	13.11	12.58
Tobacco to total food and beverages	5.63	2.48	1.49	0.86	0.63	1.16
Cigarettes to total	7.97	7.36	5.97	5.17	4.14	5.13
Tobacco to total	3.04	1.44	0.72	0.38	0.20	0.47
Urban						
Cigarettes to total food and beverages	16.98	17.39	14.74	13.02	13.94	14.07
Tobacco to total food and beverages	2.17	2.17	1.05	0.61	0.49	0.74
Cigarettes to total	8.24	8.30	6.71	5.51	4.17	5.21
Tobacco to total	1.11	1.04	0.48	0.26	0.15	0.28
Rural						
Cigarettes to total food and beverages	14.19	12.91	10.36	9.36	9.52	10.29
Tobacco to total food and beverages	6.50	3.21	1.87	1.28	1.23	1.79
Cigarettes to total	7.39	6.78	5.25	4.50	3.92	5.00
Tobacco to total	3.60	1.69	0.95	0.62	0.50	0.87

Source: household budget survey, 199/2000.

PART 3. ELASTICITY ANALYSIS

1. ELASTICITY ESTIMATES FROM OTHER STUDIES

Empirical studies in different countries in recent decades have concluded that cigarettes are price-inelastic and income-inelastic in developed countries. Kazem (1993) reports the following results from a literature review: Schoenberg (1933) made a two-phase study to estimate price elasticity of demand for cigarettes by relating per capita consumption to real price and time. With time series data for the first phase, 1913-31, the price elasticity for demand was -0.25 and for the second phase 1923-31 it was -0.68. Maier (1955) estimated price elasticity of demand during 1929-43 at -0.10. Using a geographic cross-sectional approach, he concluded that only income and price need be used as independent variables. By performing partial regressions of cigarette purchases on per capita income, he found an income elasticity of demand that ranged from 0.29 (1948) to 0.6 (1951). His estimated price elasticity of demand resulting from the partial regression of cigarette purchases on retail price ranged from -1.48 in 1947 to -1.08 in 1949.

Sackrin (1957) estimated price elasticity of demand at -0.3 and income elasticity of demand of 0.5 for 1927-41. In 1962 he performed an analysis using time series data from 1926-58, which

gave the estimates of the same magnitude as over the shorter time period. When he used time series data from 1920 to 1938, the estimated price elasticity of demand was -0.39 and income elasticity of demand was 0.22.

Lyon and Simon (1968), using pooled data in 37 states in the United States for 1951-64, estimated price elasticity of demand to be -0.511 with 95% confidence limits of -0.346 and -0.713. Houthakker and Taylor (1970) used personal consumption expenditure on tobacco products (cross-sectional study). They estimated price elasticity of demand at -0.536 and income elasticity of demand at 0.866, using data from 1929-64. Hamilton (1972) estimated the degree to which US cigarette consumption was affected by cigarette advertisement bans and health concerns, using time series data for 1925-70. The independent variables included per capita disposable income and the relative cigarette sale price index. He arrived at a price elasticity of demand of -0.511 and income elasticity of demand of 0.734.

Fugi (1980) estimated income elasticity of demand at 0.3. Price elasticity of demand was approximately -0.45, so he suggested that the strategy of raising taxes on cigarettes would be successful in reducing consumption. Young (1983) found results supporting the hypothesis of asymmetric responses to changes in market forces. He estimated price elasticity of demand at -0.33, and income elasticity of demand of 0.15, so for consumption to fall by 4.5%, price would need to rise by 14% through tax increases; this would lead to an increase in government revenue. Bishop and Yoo (1985) used time series data in the US for 1945-80 to estimate price elasticities of demand ranging from -0.406 to -0.64 (depending on the equation specification). Income elasticity of demand ranged from 0.861 to 1.096. Kao and Trembly (1988) estimated price elasticity of demand ranging from -0.495 to -0.783.

Beltagi and Levin (1986) estimated a dynamic demand model for cigarettes based on pooled data from 1963 to 1980. They studied the effect of lower prices of certain commodities in neighbouring states on sales in those states. Price elasticity of demand was found to be -0.2; income elasticity was insignificant. Cross price elasticity of demand was 0.08. The implications of their estimates were that a tax increase that raised prices by 10% would reduce per capita consumption by 1.4%. Seldon and Doroodian (1989) used time series data from 1952 to 1984. Price elasticity of demand was found to be -0.4. Seldon and Boyd (1991), using time series data from 1953 to 1984, estimated price elasticity of demand at -0.26. The authors found that an increase in excise tax rate would increase price and reduce consumption. Tegene (1991) used time series data from 1929-86 to estimate price elasticity of demand at -0.289 and concluded that price and income elasticity decline over time. As elasticity declines, increases in cigarette tax rates will generate greater revenue increases.

Becker et al. (1994), using pooled data, confirmed the addictive nature of cigarettes and the negative price effect. The estimated long -run price elasticity was double the short-run one.

2. ESTIMATES OF EXPENDITURE ELASTICITY

Cross-sectional data from the 1995/96 and 1999/2000 CAPMAS household expenditure surveys are used to estimate expenditure elasticity (the percentage change in expenditures on tobacco products in response to a change in total income) and price elasticity. Estimated are done for

different expenditure quartiles, different educational status sub samples and different employment status sub samples. As smoking habits in urban areas are different from those in rural areas, separate models for urban and rural areas were estimated. In all models, simple linear regression was used, where price and expenditure variables appear as logarithms.

The expenditure elasticity model has the form:

$$\ln(\text{tobacco /cigarette expenditure})_i = \alpha + \beta \ln(\text{total expenditure})_i + B_2(\text{education}) + B_3(\text{occupation})$$

where expenditure is used as a proxy for household income and is calculated on a per capita basis.

Table 20 shows a positive relationship between total household expenditure per capita and consumption of cigarettes and of other tobacco products, indicating that an increase in income would increase consumption of cigarettes and tobacco, and a decrease in income would decrease tobacco product expenditures. This would apply to nominal and real income. Since the income coefficient has a positive sign, tobacco is a normal good. The values of the expenditure (income) elasticity are less than 1, and very low especially for urban tobacco expenditures, so the change in consumption of cigarettes and tobacco would be smaller than the change in income.

Table 20. Expenditure elasticity for cigarettes and tobacco, 1995/96

Coefficients						
		Unstandardized coefficients		Standardized coefficients		
Model	Constant	Beta	Standard error	Beta	*t* test	Significance
National cigarettes expenditure						
1	(Constant)	2.443	0.130		18.803	0.000
	LNTOTEXP	0.429	0.015	0.365	28.949	0.000
	DE04	-2.238E-02	0.005	-0.062	-4.785	0.000
	OCCUP	-5.020E-03	0.003	-0.025	-1.954	0.051
National tobacco expenditure						
2	(Constant)	2.542	0.183		13.876	0.000
	LNTOTEXP	0.428	0.021	0.382	20.547	0.000
	DE04	-4.120E-02	0.006	-0.123	-6.579	0.000
	OCCUP	-1.012E-03	0.003	-0.005	-0.299	0.765
Urban cigarettes expenditure						
3	(Constant)	2.467	0.190		12.973	0.000
	LNTOTEXP	0.416	0.022	0.326	19.234	0.000
	DE04	-7.590E-03	0.007	-0.018	-1.032	0.302
	OCCUP	-3.778E-03	0.004	-0.016	-0.930	0.352
Urban tobacco expenditure						
4	(Constant)	2.553	0.571		4.469	0.000
	LNTOTEXP	0.309	0.065	0.229	4.747	0.000
	DE04	-5.436E-02	0.031	-0.085	-1.756	0.080
	OCCUP	-3.049E-03	0.011	-0.014	-0.284	0.776
Rural cigarette expenditure						
5	(Constant)	3.825	1.219		3.138	0.002
	LNTOTEXP	0.169	0.136	0.123	1.247	0.215
	DE04	-6.400E-02	0.064	-0.098	-1.005	0.317
	OCCUP	-7.264E-03	0.020	-0.035	-0.363	0.717
Rural tobacco expenditure						
6	(Constant)	2.022	0.662		3.054	0.002
	LNTOTEXP	0.368	0.076	0.272	4.828	0.000
	DE04	-4.514-02	0.036	-0.069	-1.245	0.214
	OCCUP	-4.988E-03	0.013	-0.021	-0.377	0.706

Source: Author's estimates using household budget survey data, 1995/96.

Expenditure elasticities for cigarettes in 1995/96 were calculated at 0.429 at national level, 0.414 in urban areas and 0.169 in rural areas. Expenditure elasticities for other tobacco products in

1999/00 were calculated at 0.428 at the national level, 0.309 in urban areas and 0.368 in rural areas. At the national level there is a negative relationship between total expenditure on tobacco and educational level, but it is statistically insignificant. In urban as well as in rural areas there is also an insignificant relationship between occupation and education and expenditure on cigarettes and tobacco.

Table 21 shows that the expenditure elasticity for tobacco in 1999/2000 was 0.479 at the national level, 0.504 in urban areas and 0.408 in rural areas, very similar to the estimates using the 1995/96 data. At the national level, and in urban and rural areas, the relationship between expenditure on cigarettes and education is negative, while the relationship between expenditure on cigarettes and occupation was found insignificant, which confirms our previous finding for the three components. Expenditure elasticity for tobacco in 1999/2000 was calculated at 0.408 at the national level, 0.309 in urban areas and 0.368 in rural areas, indicating a normal good with inelastic demand function.

Table 21. Expenditure elasticities for cigarettes, 1999/2000

SIG T	T	BETA	SE B	B	Variable (total)
0.0000	62.183	0.358149	0.007708	0.479313	LNTOTEXP
0.0000	-92.400	-0.500381	0.004300	-0.397290	LNPRICR
0.0000	-5.986	-0.037247	0.006008	-0.035966	EDCCLASS
0.3191	0.996	0.006073	0.001754	0.001748	OCCPCLAS
0.0000	31.485		0.073058	2.0300252	CONSTANT
SIG T	T	BETA	SE B	B	Variable (urban)
0.0000	49.165	0.408177	0.010256	0.504250	LNTOTEXP
0.0000	-56.284	-0.429116	0.007322	-0.412133	LNPRICR
0.0000	-60 214	-0.054735	0.007884	-0.048991	EDCCLASS
0.1303	1.513	0.013077	0.002251	0.003406	OCCPCLAS
0.0000	21.599		0.097922	2.114990	CONSTANT
SIG T	T	BETA	SE B	B	Variable (rural)
0.0000	32.095	0.252556	0.012734	0.408686	LNTOTEXP
0.0000	-73.210	-0.577295	0.005264	-0.385386	LNPRICR
0.0000	-4.252	-0.036321	0.009930	-0.042220	EDCCLASS
0.8203	0.227	0.001934	0.002845	6.46226E-04	OCCPCLAS
0.0000	24.317		0.119740	2.911764	CONSTANT

Source: Author's estimates using household budget survey data, 1995/6 and 1999/2000.

3. EXPENDITURE ELASTICITY BY QUARTILE

In 1995/96, households were divided into four expenditure brackets as follows: below LE 3,988, from LE 3,989 to LE 5,637, LE 5,638 to LE 7,906 and LE 7,907 and above at the national level, below LE 4,487.7, LE 4,487.8-LE 6,466.5, LE 6,466.6-LE 9,313.7 and LE 9,313.8 and above in urban areas and below LE 3,674, LE 3,675-LE 5,148, LE 5,149-LE6,924, LE 6,925 and above in rural areas. In 1999/2000 the expenditure quartiles were ≤LE 5,753, LE 5,754-LE 8,122, LE

8,123-LE 11,668 and LE 11,668+ at the national level and ≤LE 6499, LE 6,500-LE 9291, LE 9,292-LE 13,650 and LE13,650 and above in urban areas and ≤LE,5029, LE 5,029-LE 6,817, LE 6,818-LE 9,141 and LE 9,141 and above in rural areas.

Table 22 presents the expenditure elasticities for tobacco and cigarettes for the different expenditure quartiles at the national, urban and rural levels in 1995/96 and 1999/2000. Almost all coefficients appear to be significant at the 5% significance level and expenditure elasticities have the expected positive signs. Expenditure elasticity was 0.831 for the poorest quartile in 1995 and 0.638 in 1999/2000. As expenditure level becomes higher, expenditure elasticity declines to reach 0.387 in 1995/96 and 0.596 in 1999/2000 for the highest quartile. This is consistent with economic theory: at lower incomes, changes in income have a greater effect on expenditures, since spending is more constrained. At higher incomes, changes in income have less impact on spending decisions on cigarettes and tobacco.

Table 22. Expenditure elasticity of tobacco by expenditure quartile, 1995/96 and 1999/2000

		Unstandardized coefficients (*B*)	
Total		1995/96	1999/2000
Tot Q1	LNTOTEXP	0.831	0.638
Tot Q2	LNTOTEXP	0.719	0.496
Tot Q3	LNTOTEXP	0.584	0.616
Tot Q4	LNTOTEXP	0.387	0.596
Urban			
Urb Q1	LNTOTEXP	0.753	0.605
Urb Q2	LNTOTEXP	0.517	0.629
Urb Q3	LNTOTEXP	0.243	0.547
Urb Q4	LNTOTEXP	0.309	0.530
Rural			
Rur Q1	LNTOTEXP	0.915	0.824
Rur Q2	LNTOTEXP	0.645	0.515
Rur Q3	LNTOTEXP	0.438	0.403
Rur Q4	LNTOTEXP	0.377	0.609
Dependent variable: LNTOBTOT			

Source: Annex Table A3.1 and Table A3.4.

What is interesting is the decline in the expenditure elasticity in 1999/2000 by comparison with 1995-96 for the first two income brackets and the increase in the expenditure elasticity for the highest income brackets in 1999/2000 by comparison with 1995/96. The same pattern of elasticity estimates are seen in urban and rural areas, but the elasticities of the lowest expenditure group for rural areas are much higher.

Expenditure elasticity by educational level

The data in Table 23 show the expenditure elasticities for different educational levels at national, urban and rural levels. The data from the expenditure survey were divided into four brackets as follows: illiterate and read and write; primary and preparatory education; secondary and above

secondary; and university and postgraduate. The results of the elasticity calculations show lower expenditure elasticity for higher educational categories than lower educational categories. This is consistent with the results for income categories, and to be expected, given the correlation between education and income. For higher educational levels, changes in real or nominal income have less effect on consumption of cigarettes or tobacco than at lower educational levels. Health awareness campaigns are more effective for the highest educational levels. Again this finding holds true for the whole sample, and the urban and the rural population. Excluding the lowest educational level in rural areas expenditure elasticity increased in 1999/2000 compared to 1995/96.

Table 23. Expenditure elasticity of tobacco by educational status, 1995/96 and 1999/2000

		Unstandardized coefficients (*B*)	
Total		1995/96	1999/2000
Tot Ed 1	LNTOTEXP	0.634	0.620
Tot Ed 2	LNTOTEXP	0.449	0.543
Tot Ed 3	LNTOTEXP	0.373	0.513
Tot Ed 4	LNTOTEXP	0.377	0.566
Urban			
Urb Ed 1	LNTOTEXP	0.555	0.624
Urb Ed 2	LNTOTEXP	0.510	0.515
Urb Ed 3	LNTOTEXP	0.411	0.503
Urb Ed 4	LNTOTEXP	0.370	0.547
Rural			
Rur Ed 1	LNTOTEXP	0.625	0.549
Rur Ed 2	LNTOTEXP	0.273	0.478
Rur Ed 3	LNTOTEXP	0.278	0.459
Rur Ed 4	LNTOTEXP	0.347	0.419
Dependent variable: LNTOBTOT (tobacco total expenditure)			

Source: Author's estimates, Annex Tables A3.2 and A3.5.

Expenditure elasticity by work status

Table 24 shows the expenditure elasticity for different work status of the head of the household. Four categories were defined: wage earners; employers; self-employed; and non wage earners. The data clearly show the impact of changes of income on the consumption of tobacco for low income groups (non wage workers), for whom expenditure elasticity is higher than 1, while it is lower than 1 for the other work status groups. A comparison between the estimates for 1995/96 and 1999/2000 shows interesting findings, such as an increase in income elasticity, consistent with the previous finding. The negative coefficient for non wage earners is not significant, and is probably due to unreliable income data for this group.

Table 24. Expenditure elasticity of tobacco by work status, 1995/96 and 1999/2000

		Unstandardized coefficients (*B*)	
Total		1995/96	1999/2000
Tot Wk 1	LNTOTEXP	0.634	0.538
Tot Wk 2	LNTOTEXP	0.449	0.664
Tot Wk 3	LNTOTEXP	0.373	0.568
Tot Wk 4	LNTOTEXP	0.377	-0.175
Urban			
Urb Wk 1	LNTOTEXP	0.555	0.518
Urb Wk 2	LNTOTEXP	0.510	0.614
Urb Wk 3	LNTOTEXP	0.411	0.550
Urb Wk 4	LNTOTEXP	0.370	-2.845
Rural			
Rur Wk 1	LNTOTEXP	0.625	0.452
Rur Wk 2	LNTOTEXP	0.273	0.587
Rur Wk 3	LNTOTEXP	0.278	0.550
Rur Wk 4	LNTOTEXP	0.347	-0.140
Dependent variable: LNTOBTOT			

Source: Annex Table A3.3 and Table A3.7.

4. PRICE ELASTICITY ESTIMATES

As mentioned earlier, expenditures on different kinds of tobacco products were recorded in the household budget surveys, but there were no quantity or price records. This inhibits detailed analysis of demand, and prevents us from making inferences from the level of expenditures on tobacco products to the quantity consumed. For instance, poorer individuals probably smoke cheaper brands of cigarettes than more well off individuals, and hence they pay different prices, and urban prices are probably different from rural prices. Thus wealthy urban households could spend more on cigarettes, but smoke fewer cigarettes per day.

Average prices of different types of tobacco products were available, thus all households were assumed to purchase any particular type of tobacco product at the same price. This made it possible to calculated "unit values" by dividing total expenditure on any type of tobacco product by the average price. The average price of all types of tobacco (together) was calculated for each household by weighting prices by quantity consumed for each type.

The formulas used in this part are:
ln(tobacco expenditure) = constant + ßln(price)
ln(cigarette expenditure) = constant +ßln(price)
Table 21 (above) reports the price elasticity for tobacco as -0.397, -0.412 and -0.385 at the

national, urban and rural levels according to the data for 1999/2000. Occupational status does not have a significant impact on demand.

Price elasticity by expenditure quartiles

Table 25 presents the price elasticity estimates for the various quartiles, at the urban, rural and national levels in 1995/96 and 1999/2000. All coefficients are significantly different from 0 at the 5% significance level. As expected, price elasticities have negative signs. Price elasticity is higher for higher income quartiles than for the poorer quartiles, suggesting that the richest quartiles are more responsive to price changes than the poorest quartile. This finding was unexpected. Consumption of tobacco for the lowest categories is affected more by changes in income than by changes in price than is the case for the other income categories. A comparison between 1995/96 and 1999/2000 shows a slight increase in price elasticity for all quartiles, indicating that the demand for tobacco has become more sensitive to the changes in the prices of tobacco.

Table 25. Price elasticity of tobacco by expenditure quartile, Egypt, 1995/96 and 1999/2000

		Unstandardized coefficients (*B*)	
Total		1995/96	1999/2000
Tot Q1	LNPRICE	-0.298	-0.363949
Tot Q2	LNPRICE	-0.332	-0.390205
Tot Q3	LNPRICE	-0.354	-0.408355
Tot Q4	LNPRICE	-0.352	-0.489666
Urban			
Urb Q1	LNPRICE	-0.296	-0.391725
Urb Q2	LNPRICE	-0.327	-0.421471
Urb Q3	LNPRICE	-0.314	-0.423416
Urb Q4	LNPRICE	-0.256	-0.467404
Rural			
Rur Q1	LNPRICE	-0.285	-0.346931
Rur Q2	LNPRICE	-0.349	-0.366055
Rur Q3	LNPRICE	-0.349	-0.379725
Rur Q4	LNPRICE	-0.375	-0.467159
Dependent variable: LNTOBTOT			

Source: Annex Tables A3.7 and A3.10.

5. PRICE ELASTICITY BY EDUCATIONAL STATUS

Table 26 presents the price elasticity of demand for tobacco for different educational levels. All coefficients appear to be significantly different from 0 at the 5% significance level. As expected, all price elasticities have negative signs. Comparison of the data from 1995/96 and 1999/2000 shows an increase in the value of elasticity for all educational levels. Though the demand for

tobacco is still inelastic, it responds relatively more to changes in price in 1999/2000 than before. Groups with more education have lower price elasticity, which is to be expected given the correlation between income and education.

Table 26. Price elasticity of tobacco by educational status, 1995/96 and 1999/2000

		Unstandardized coefficients (*B*)	
Total		1995/96	1999/2000
Tot Ed 1	LNPRICE	-0.383	-0.442
Tot Ed 2	LNPRICE	-0.308	-0.443
Tot Ed 3	LNPRICE	-0.308	-0.410
Tot Ed 4	LNPRICE	-0.268	-0.441
Urban			
Urb Edu1	LNPRICE	-0.365	-0.468
Urb Edu2	LNPRICE	-0.333	-0.450
Urb Edu3	LNPRICE	-0.270	-0.419
Urb Edu4	LNPRICE	-0.252	-0.409
Rural			
Rur Ed 1	LNPRICE	-0.372	-0.413
Rur Ed 2	LNPRICE	-0.273	-0.382
Rur Ed 3	LNPRICE	-0.323	-0.373
Rur Ed 4	LNPRICE	-0.244	0.356
Dependent variable: LNTOBTOT			

Source: Annex Tables A3.8 and A3.11.

Price elasticity by work status

An increase in price elasticity may be observed in the data of Table 27, which show an increase in the price sensitivity of demand for different work groups in 1999/2000 compared to 1995/96, except for non-wage rural workers, for whom the price elasticity is positive in 1995/96 and not significant in 1999/2000 (Annex Table A3.12).

Table 27. Price elasticity of tobacco by work status, Egypt, 1995/96 and 1999/2000

		Unstandardized coefficients (*B*)	
Total		1995-96	1999-2000
Tot Wk 1	LNPRICE	-0.349	-0.438978
Tot Wk 2	LNPRICE	-0.377	-0.473072
Tot Wk 3	LNPRICE	-0.385	-0.437011
Tot Wk 4	LNPRICE	-0.817	-0.273406
Urban			
Urb Wk 1	LNPRICE	-0.322	-0.465052
Urb Wk 2	LNPRICE	-0.319	-0.506317
Urb Wk 3	LNPRICE	-0.385	-0.427195
Urb Wk 4	LNPRICE	-1.015	-0.509152
Rural			
Rur Wk 1	LNPRICE	-0.338	-0.388915
Rur Wk 2	LNPRICE	-0.369	-0.421168
Rur Wk 3	LNPRICE	-0.373	-0.433808
Rur Wk 4	LNPRICE	-0.729	-0.183929
Dependent variable: LNTOBTOT			

Source: Annex Tables A3.9 and A3.12.

PART 4. SIMULATIONS OF PRICE AND TAX INCREASES

Revenue will increase when tax increases raise prices, because consumption changes by a smaller percentage than the percentage change in price (price inelastic commodity). This means that the higher tax per pack more than offsets the revenue effect of the fall in sales. The more price-inelastic a commodity is, the greater the increase in total revenues if taxes increase. Cigarettes, being price-inelastic, are a perfect case for an excise tax. Typically, the retail price rises by the whole amount of the tax, and the full tax increase is passed onto the consumer. Since taxes are only part of the total price, the resulting price rise will be smaller in percentage terms than the percentage increase in the tax. For example, if the price is 100, of which 50 is tax, and tax rises by 100% to 100, the new price will be 150, a 50% price increase.

In this part of the study we examine the impact on cigarette consumption and government revenues of an increase in prices caused by an increase in the excise tax on cigarettes. The data for 1995/96 and 1999/2000 show clearly that a tax/price rise will lead to a significant reduction in consumption. This is true for all income groups (the lowest income groups show a lower relative change in consumption), for the different educational groups (the lowest educational groups show the highest change in consumption for a change in the prices) and for the different work status (in particular the non wage category).

Table 28. Impact of price increases on elasticity, Egypt, 1995/96

		Elasticity	Increase in price		
	Expenditure quartile		10%	20%	40%
Total	Q1	-0.298	-0.3278	-0.3576	-0.4172
	Q2	-0.332	-0.3652	-0.3984	-0.4648
	Q3	-0.354	-0.3894	-0.4248	-0.4956
	Q4	-0.352	-0.3872	-0.4224	-0.4928
Urban	Q1	-0.296	-0.3256	-0.3552	-0.4144
	Q2	-0.327	-0.3597	-0.3924	-0.4578
	Q3	-0.314	-0.3454	-0.3768	-0.4396
	Q4	-0.256	-0.2816	-0.3072	-0.3584
Rural	Q1	-0.285	-0.3135	-0.342	-0.399
	Q2	-0.324	-0.3564	-0.3888	-0.4536
	Q3	-0.349	-0.3839	-0.4188	-0.4886
	Q4	-0.375	-0.4125	-0.45	-0.525
Education levels					
Total	1	-0.384	-0.4224	-0.4608	-0.5376
	2	-0.308	-0.3388	-0.3696	-0.4312
	3	-0.308	-0.3388	-0.3696	-0.4312
	4	-0.268	-0.2948	-0.3216	-0.3752
Urban	1	-0.365	-0.4015	-0.438	-0.511
	2	0.333	0.3663	0.3996	0.4662
	3	-0.27	-0.297	-0.324	-0.378
	4	-0.252	-0.2772	-0.3024	-0.3528
Rural	1	-0.372	-0.4092	-0.4464	-0.5208
	2	-0.372	-0.4092	-0.4464	-0.5208
	3	-0.273	-0.3003	-0.3276	-0.3822
	4	-0.244	-0.2684	-0.2928	-0.3416
Work status					
Total	1	-0.349	-0.3839	-0.4188	-0.4886
	2	-0.377	-0.4147	-0.4524	-0.5278
	3	-0.385	-0.4235	-0.462	-0.539
	4	-0.817	-0.8987	-0.9804	-1.1438
Urban	1	-0.322	-0.3542	-0.3864	-0.4508
	2	-0.319	-0.3509	-0.3828	-0.4466
	3	-0.357	-0.3927	-0.4284	-0.4998
	4	-1.015	-1.1165	-1.218	-1.421
Rural	1	-0.338	-0.3718	-0.4056	-0.4732
	2	-0.369	-0.4059	-0.4428	-0.5166
	3	-0.373	-0.4103	-0.4476	-0.5222
	4	-0.729	-0.8019	-0.8748	-1.0206

Source: Author's estimates using household budget survey, 1995/96.

Table 29. Impact of price increases on elasticity, Egypt, 1999/2000

Expenditure quartile			Increase in price		
		Elasticity	10%	20%	40%
Total	Q1	-0.364	-0.4004	-0.4368	-0.5096
	Q2	-0.39	-0.429	-0.468	-0.546
	Q3	-0.408	-0.4488	-0.4896	-0.5712
	Q4	-0.49	-0.539	-0.588	-0.686
Urban	Q1	-0.392	-0.4312	-0.4704	-0.5488
	Q2	-0.421	-0.4631	-0.5052	-0.5894
	Q3	-0.423	-0.4653	-0.5076	-0.5922
	Q4	-0.467	-0.5137	-0.5604	-0.6538
Rural	Q1	-0.347	-0.3817	-0.4164	-0.4858
	Q2	-0.366	-0.4026	-0.4392	-0.5124
	Q3	-0.38	-0.418	-0.456	-0.532
	Q4	-0.467	-0.5137	-0.5604	-0.6538
Education					
Total	1	-0.442	-0.4862	-0.5304	-0.6188
	2	-0.443	-0.4873	-0.5316	-0.6202
	3	-0.41	-0.451	-0.492	-0.574
	4	-0.441	-0.4851	-0.5292	-0.6174
Urban	1	-0.468	-0.5148	-0.5616	-0.6552
	2	-0.45	-0.495	-0.54	-0.63
	3	-0.419	-0.4609	-0.5028	-0.5866
	4	-0.409	-0.4499	-0.4908	-0.5726
Rural	1	-0.413	-0.4543	-0.4956	-0.5782
	2	-0.382	-0.4202	-0.4584	-0.5348
	3	-0.373	-0.4103	-0.4476	-0.5222
	4	-0.356	-0.3916	-0.4272	-0.4984
Work status					
Total	1	-0.439	-0.4829	-0.5268	-0.6146
	2	-0.473	-0.5203	-0.5676	-0.6622
	3	-0.437	-0.4807	-0.5244	-0.6118
	4	-0.273	-0.3003	-0.3276	-0.3822
Urban	1	-0.465	-0.5115	-0.558	-0.651
	2	-0.506	-0.5566	-0.6072	-0.7084
	3	-0.427	-0.4697	-0.5124	-0.5978
	4	-0.509	-0.5599	-0.6108	-0.7126
Rural	1	-0.389	-0.4279	-0.4668	-0.5446
	2	-0.421	-0.4631	-0.5052	-0.5894
	3	-0.434	-0.4774	-0.5208	-0.6076
	4	-0.184	-0.2024	-0.2208	-0.2576

Source: Author's estimates using household budget survey, 1995-96.

PART 5. INTERVIEWS WITH UNIVERSITY STUDENTS ON SMOKING

Research and studies on smoking patterns in the Egyptian population have been carried out by several organizations (MOPH, 2000-01).

- A national survey of smoking prevalence in Egypt was conducted in 1979. It found that 32.5% of men and 1.5% of women are smokers.
- A 1980 survey estimated that 9 million Egyptians smoked cigarettes and that this increased by 25 new smokers every hour.
- A comparative study was conducted in Cairo (1981-88) that found that 39.8% of males are smokers and 1% of females are smokers.
- The USAID-funded Egypt household healthcare youth and expenditure survey, a nationally representative survey of 10,000 households in 1994/95, found smoking prevalence to be 49% among males over 16 years of age, and 1.2% among women over 16.
- A study on smoking prevalence among 9,128 adolescents was conducted in 1998. It revealed that 6% are smokers. Working adolescent boys have double the smoking prevalence rate (15.4%) of non working boys (7.6%).
- National research on addiction was conducted from 1994 to 1996 through a descriptive cross-sectional epidemiological study on the problem of substance abuse, with a sample of 16,645. It found that 74.9% of drug addicts are smokers compared to 35.6% of the general population in the sample.
- The preliminary results of a rapid assessment of drug abuse patterns among addicts (1998/99), show that more than 80% of drug addicts are heavy smokers.

We decided to undertake a rapid survey on tobacco use among university students in April 2001. A total of 559 students (282 males and 277 females) were interviewed in the following faculties at Cairo University: economics (31% of the males and 73.4% of the females), science (2.8% of the males and 1.7% of the females), commerce (26.8% of the males and 8% of the females), engineering (24.7% of the males and 9.1% of the females), pharmacy (2.1% of the males and 5.2% of the females), applied art (6.6% of the males and 1.7% of the females), languages (0.3% of the males and 0.6% of the females) and education (5.2% of the males and 0.3% of the females). This was not a representative sample, but the student body at Cairo University is fairly representative of young Egyptians from ordinary lower middle and middle class families.

The age range was 27-15 for the male students and 24-16 for females. Regarding their marital status, 92.3% of the male students and 92.9% of the female students had never married. Married students comprised 1.1% of both sexes; 6.7% of the males and 6.1% of the females were engaged. Four indicators of the socioeconomic status of the sample were used: whether the student was fee-paying; Egyptian or foreign language high school graduate; whether the father was working or not; and the work status of mother.

The socioeconomic status of the females was higher than that of the males. The data showed that 80.2% of the males and 52.1% of the females were in the Arabic section (free university education), while the rest were in the foreign language section (paying tuition fees). Most of the sample (87.5% of the males and 92.7% of females) had the Egyptian school certificate, 4.1% of the males and 1% of the females had a free commercial or technical high certificate, and the rest had obtained other certificates from fee-paying schools. Of the sample, 77.9% of the males and

53.8% of the females came from public schools, 12.3% of the males and 30.1% of the females came from private schools and the rest came from foreign language schools or had studied in another Arab country. Work status: 71.1% of the fathers of the males and 81.5% of the fathers of the females worked. Only 27.5% of the mothers of the males interviewed worked and 43.6% of the mothers of the females.

Table 30 shows that 50.9% of the males and 11.9% of the females have ever smoked, giving an average for both of 31.5%. Current smokers accounted for 22% of the young men and 1.7% of the women, (average of 11.8%). The relatively low smoking rate among females represents social norms that make is less acceptable for women to smoke. On average, most students who smoked had smoked for 5 years (males) and 4 years (females); the average age was 19 years for males and 20 years for females.

Table 30. Smoking among students

	Male (%)	Female (%)	Total (%)
Have you ever smoked a cigarette?			
Yes	50.9	11.9	31.5
No	49.1	88.1	68.5
Group total	100.0	100.0	100.0
Do you smoke now?			
Yes	22.0	1.7	11.8
No	78.0	98.3	88.2
Group total	100.0	100.0	100.0

Four variables were used to study whether smoking prevalence differs by economic status. Table 31 shows that working status of parents was not a clear determinant of smoking; respondents were more likely to smoke if a parent was working or had worked abroad. This finding is expected, because of presumed higher economic status of the family, and hence higher disposable income of the respondent. Similarly the working status of the mother might affect the smoking behaviour of the children, as working mothers might increase the family income.

Table 31. Smoking Prevalence and father's work status

Do you smoke now?	Father Works		Group total (%)	Father does not work		Group total (%)
	Male (%)	Female (%)		Male (%)	Female (%)	
Yes	20.6	2.1	10.7	25.3		11.8
No	79.4	97.9	89.3	74.7	100.0	88.2
Group total	100.0	100.0	100.0	100.0	100.0	100.0
Do you smoke now?	Father works or has worked abroad?					
	Yes			No		
	Male	Female	Total	Male	Female	Total
Yes	23.7	3.9	13.3	21.1	0.5	11.1
No	76.3	96.1	86.7	78.9	99.5	88.9
Group total	100	100	100.0	100	100	100.0

Table 32. Smoking Prevalence and mother's work status

Do you smoke now?	Mother's job					Group total (%)
	Work		Group total (%)	Does not work		
	Male (%)	Female (%)		Male (%)	Female (%)	
Yes	19.0	2.4	8.8	23.1	1.2	34.3
No	81.0	97.6	91.2	76.9	98.8	65.7
Group total	100.0	100.0	100.0	100.0	100.0	100.0
Do you smoke now?	Mother works or has worked abroad?					
Yes	23	6.1	12.1	20.0	1.2	11.8
No	77	93.9	87.9	80.0	89.8	88.2
Group total	100	100	100.0	100.0	100.0	100.0

It is interesting to study the difference in smoking prevalence according to the nature of the student's school (Table 33). The percentage of smokers was relatively lower for those who were from foreign language schools, despite the fact that they were from a higher socioeconomic class, while the highest percentage was for those from public schools. We believe that this could be due to the differences in health awareness between both groups, likely to be higher among higher socioeconomic classes.

Table 33. Nature of school and behaviour of smoking of students

Do you smoke now?	Public School		Private School		Language school		Other Arab countries
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)
Yes	23.4	1.3	22.9	1.2	11.1	4.3	
No	76.6	98.7	77.1	98.8	88.9	95.7	100.0
Group total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Almost two-thirds of non-smoking respondents said that smoking was something they hated; religion and health reasons are important reasons for not smoking, as indicated in Table 34.

Table 34. Reasons why students do not smoke

Why don't you smoke?	Male (%)	Female (%)	Group total
Religion	59.0	60.1	59.6
Money	11.1	14.2	12.9
Health	38.2	40.9	39.8
Hate smoking	65.0	63.3	64.1
Tradition		1.8	1.0
Affects sporting prowess	0.5		0.2
Has no benefits	0.9	1.8	1.4
I'll smoke later		0.4	0.2

Most (92%) of the students who used tobacco products other than cigarettes, smoked water pipes. Intensity of smoking (Table 36) is relatively high: 73.8% of males and 40% of the females who smoke do so every day. Males on average smoked 14 cigarettes per day with a maximum of 40 cigarettes and females smoke 6 cigarettes per day with a maximum of 10.

Table 35. Pattern of smoking of students

Do you smoke any thing other than cigarettes?	Male (%)	Female (%)	Group total (%)
Yes	17.1	2.1	9.6
No	82.9	97.9	90.4
Group total	100.0	100.0	100.0
Cigar	8.3		7.4
Water pipe	91.6	100.0	92.6
Group total	100.0	100.0	100.0

Table 36. Intensity of smoking

Do you smoke every day?	Group total			
Yes	71.2			
No	28.8			
Group total	100.0			
How many cigarettes do you smoke per day?	Max		Mean	
	M	F	M	F
	40	10	14.25	5.75

The amount spent on cigarettes ranged from LE 63 to LE 250 per month for males and LE 20 to LE 120 for women, with the average amount being LE 66 for females and LE 64 for males.

Table 37. Total monthly spending on cigarettes by students (Egyptian pounds)

Spending on cigarettes per month	Min		Max		Mean	
	M	F	M	F	M	F
	63.00	20.00	250.0	120.0	63.87	66.25

On average, males spent LE 3.22 per pack and women paid a little more (LE 3.7) consistent with their higher socioeconomic status (Table 37).

Table 38. Price paid for cigarettes (LE)

Price per pack of cigarettes	Minimum		Maximum		Mean	
	M	F	M	F	M	F
	1.00	1.60	5.00	4.50	3.22	3.78

Table 39. Sources of cigarettes

How do you get cigarettes?	Male (%)	Female (%)
Buy	95.2	80.0
Borrow	15.9	20.0
Gift	15.9	40.0

Most of the students bought cigarettes, however substantial percentages also borrowed or were given cigarettes. Egyptian cigarettes were smoked by 55.2% of the smokers, 80% of females and 53.2% of males (Table 40). However the data in Table 41 contradict this finding for women, 80% of whom said they smoked Marlboro.

Table 40. Type of cigarette smoked by students

Do you smoke Egyptian or foreign cigarettes (manufactured or imported)?	Male (%)	Female (%)	Group total
Egyptian	53.2	80.0	55.2
Foreign	46.8	20.0	44.8
Group total	100.0	100.0	100.0

Table 41. Brand of cigarette smoked by students

Brand	Male (%)	Female (%)	Group total
Cleopatra	32.1	20.0	31.1
Marlboro	51.8	80.0	54.1
Super	5.4		4.9
Rothmans	3.6		3.3
Merit	5.4		4.9
L&M	1.8		1.6

Almost 82% of the smokers interviewed wanted to stop smoking (Table 42). Most cite health reasons, with economic reasons in third place. A quarter of the respondents (and a much larger proportion of women) did not know why they want to stop smoking.

Table 42. Desire to stop smoking

Do you want to stop smoking?	Male (%)	Female (%)	Group total
Yes	82.3	80.0	82.1
No	17.7	20.0	17.9
Group total	100.0	100.0	100.0
Why?			
Health	60.8	40.0	58.9
Don’t know	21.6	60.0	25.0
Money	11.8		10.7
Religion	3.9		3.6
No use	2.0		1.8

Table 43. Student opinions on the effect of an increase in cigarette prices

Would an increase in the prices of cigarettes stop you from smoking?	Male (%)	Female (%)	Group total
Yes	45.2	40.0	44.8
No	54.8	60.0	55.2
Group total	100.0	100.0	100.0

Forty-five percent of the students said that an increase in prices would help them to stop smoking. Most regarded smoking as a habit or addiction and almost a quarter regarded smoking as a sign of self-confidence or a fashion. Very few said that smoking was very important, which is a good sign (Table 44). Almost all (95.8%) knew that smoking has bad heath effects, unsurprising since all are university students (Table 45).

Table 44. Attitudes to smoking

Do you think that smoking …	Male (%)	Female (%)	Group total
…is a habit?	53.2	40.1	46.6
…gives self-confidence?	26.6	26.1	26.3
…is very important?	7.4	7.0	7.2
…is a fashion?	24.5	24.6	24.6
…is a disease or addiction?	45.4	53.9	49.6
…is in imitation of parents?	0.7	1.4	1.1
…is bad thinking?	1.8	2.1	1.9

Table 45. Perceptions of the effects of smoking

Do you think that smoking has bad effects on smokers?	Male (%)	Female (%)	Group total
Yes	95.1	96.1	95.8
No	4.6	3.5	4.0
Don’t know	0.4		0.2
Group total	100.0	100.0	100.0

The main ill-effects of smoking cited by the interviewees were: chest diseases, cancer, and decreased lifespan (Table 46).

The students said that bans on smoking in public places, information given through television programs and newspapers, lessons from home, and imitation of good examples, could play a role in limiting smoking. Around 40% recognized that price was an important way to limit smoking (Table 47).

Table 46. Bad effects of smoking

Ill-effect	Male (%)	Female (%)	Group total
Decreased life span	50.4	56.5	53.4
Cancer	79.0	78.6	78.8
Chest disease	74.0	76.8	75.9
Loss of fitness	1.4	1.1	1.3
Blood pressure	1.4	2.2	1.8
Discomfort		0.4	0.2
Nervousness	1.4	2.2	1.8
Financial burden	0.7	2.2	1.4
Bad thinking	0.7		0.4
Sterility	0.7	1.4	1.1
Loss of valued things		0.7	0.4
Hate life	0.4	0.0	0.2
Addiction	0.4	0.0	0.2
Psychological disease	0.4	0.0	0.2
Heart disease	0.7	1.1	0.9
Bad appearance		0.4%	0.2

Table 47. Means of limiting smoking

Means for limiting smoking	Male (%)	Female (%)	Group total
Television	44.7	36.0	40.4
Home	43.3	40.6	41.9
Good example	56.0	50.5	53.3
Newspaper	31.6	26.1	28.8
Family	49.6	49.5	49.6
Raise price of cigarettes	40.1	41.3	40.7
Ban smoking in public places	58.2	69.3	63.7
Religion	2.1	2.5	2.3
Fasting	0.4	0.7	0.5
Alone (by himself)	1.1	1.4	1.2
Forbid manufacture and sale of cigarettes	3.9	0.7	2.3
Harsh laws	1.4	0.7	1.1
With experience	0.7	0.4	0.5

Half of the interviewees thought that counter-advertising would have an effect on smokers. Only 12% of the interviewees thought counter-advertising was enough.

Table 48. Advertising and smoking

	Male (%)	Female (%)	Group total
Do you think that advertising against smoking will affect smokers?			
Yes	51.4	50.7	51.1
No	48.6	49.3	48.9
Group total	100.0	100.0	100.0
Do you think that advertising against smoking is enough?			
Yes	14.6	10.5	12.5
No	85.4	89.5	87.5
Group total	100.0	100.0	100.0

PART 6. TOBACCO CONTROL IN EGYPT

There are large direct, indirect and intangible costs associated with tobacco consumption that hamper economic development rather than promote it. Annual costs of treating tobacco-attributable diseases are 6% to 15% of total health costs in high-income countries. Effective policies and interventions make a real difference to tobacco prevalence and consumption and associated health outcomes. Price increases (through excise taxes on tobacco products) are the most effective and cost-effective policy tool available. Other interventions have demonstrated effectiveness, when properly enacted and enforced (comprehensive advertising and promotion bans, smoking restrictions and health education). Public support, raised through the media and the legislative process, are crucial determinants of success (World Bank, 1999).

Egypt is undertaking many steps as elements of a comprehensive national policy based on World Health Assembly resolutions. The Egyptian government is implementing a national tobacco control campaign. The national measurable objectives for tobacco use which are included in the goals of the Healthy Egyptians 2010 program will provide Egypt with a mechanism to evaluate its progress towards a tobacco-free environment. Healthy Egyptians 2010 is an initiative at the national and governorate levels.

A complete ban on radio and television advertising has existed since 1977. However advertising is permitted on billboards, in the press and at the point of purchase. In 1981 manufacturers became required by law to print health warnings on cigarette packs. A statutory health warning must be displayed on advertising. Cigarette companies-especially Philip Morris-have launched very aggressive marketing and distribution campaigns to build brand recognition and increase sales and market share. Because the companies cannot control the price of their cigarettes (since it is controlled by the government) marketing is their main tool for attracting new smokers.

Legislation for tobacco control in Egypt exists but is seldom enforced. To protect non-smokers, in 1981 legislation banned smoking in enclosed public places and on public transport such as trams and buses. Smoking is also not permitted on domestic air flights or in cinemas and theatres. Smoking is also restricted in health care institutions.

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

- Law 52/1981 forbids smoking in public places and on public transport. It set a maximum of 20 mg of tar per cigarette.
- Law 137/1981 forbids smoking in work places.
- Law 4/1994 prohibits smoking in closed public places, and introduced a fine (LE 10) for smoking on public transportation.
- Ministerial decree 344/1997 was promulgated in order to assemble a steering committee for a national programme on smoking control. The committee includes representatives from the ministries of health, information, education, social labour, *awqaf*, tourism, interior affairs and environmental affairs, as well as the high assembly of youth and sports and nongovernmental organizations working in the field. The main responsibilities of the committee are to:
    - develop a national programme for smoking control
    - define the interventions and activities
    - identify roles of each participating ministry and agency
    - develop a plan of work for a national campaign for smoking control.

A smoking control department was established on 4 August 1997 as a coordinator across all ministries, agencies and Ministry of Health and Population departments in all activities related to smoking control.

- Ministerial decree 289/1997 was issued in order to limit the quantity of tar to a maximum of 15 mg per cigarette. Cigarettes are periodically sampled to make sure that they conform to Egyptian specifications. Laboratories were established in Cairo, Alexandria and Port Said for analysis.

In June 1998, the Health Committee of the People's Assembly proposed a ban on all tobacco advertising, prohibition of the sale of cigarettes to those under age 18 and an increase in the price of cigarettes.

In November 1998, Ismail Sallam, then Minister of Health and Population, 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.

Health education has become important. Health education programme have started in schools, universities and among women's organizations. The government also sponsors an anti-smoking educational campaign, which includes radio broadcasts which also play at schools, warning students of the dangers of smoking. In April 2000 the First Lady of Egypt, Suzanne Mubarak, started a national campaign to stop smoking, aimed in particular at young people.

A national campaign to prohibit the sale of tobacco to young adults and children was begun in February 1999, aiming to mobilize the community to reject the sale of tobacco to children and convince merchants not to sell tobacco to them. The activities of this campaign included seminars, television messages and programmes, radio announcements, meetings and discussions, posters, booklets and brochures. This is being implemented in collaboration with several ministries and agencies such as ministries of international trade (economy), finance, health and environment.

In addition, the following activities are taking place:

- prohibiting cigarette advertising through progressive restrictions and related action to eliminate direct and indirect advertising
- introduction of smoking health hazards into the curriculum of preparatory schools in order to increase the awareness of students
- production and broadcasting of television spots about smoking as a risk factor for many diseases
- production of thousands of posters, stickers, booklets and pamphlets in order to increase the awareness of the public about hazards of smoking.

Community participation is encouraged through workshops and seminars. Smoking control may be also conducted in Egypt through medical syndicates. Two nongovernmental organizations have conducted several activities to help smokers quit smoking.

The national committee for smoking held a workshop on 4 and 5 March 2000. The conference was sponsored by the Ministry of Health and Population in partnership with the US Department of Health and Human Services and USAID. The workshop concluded with specific short-term and long-term recommendations for the implementation of a national smoking control work plan. It was agreed that a progress review of the smoking control work plan actions would be conducted after six months and at six month intervals thereafter.

Targets for reducing tobacco-related mortality rates were set:

Table 49. Disease reduction targets

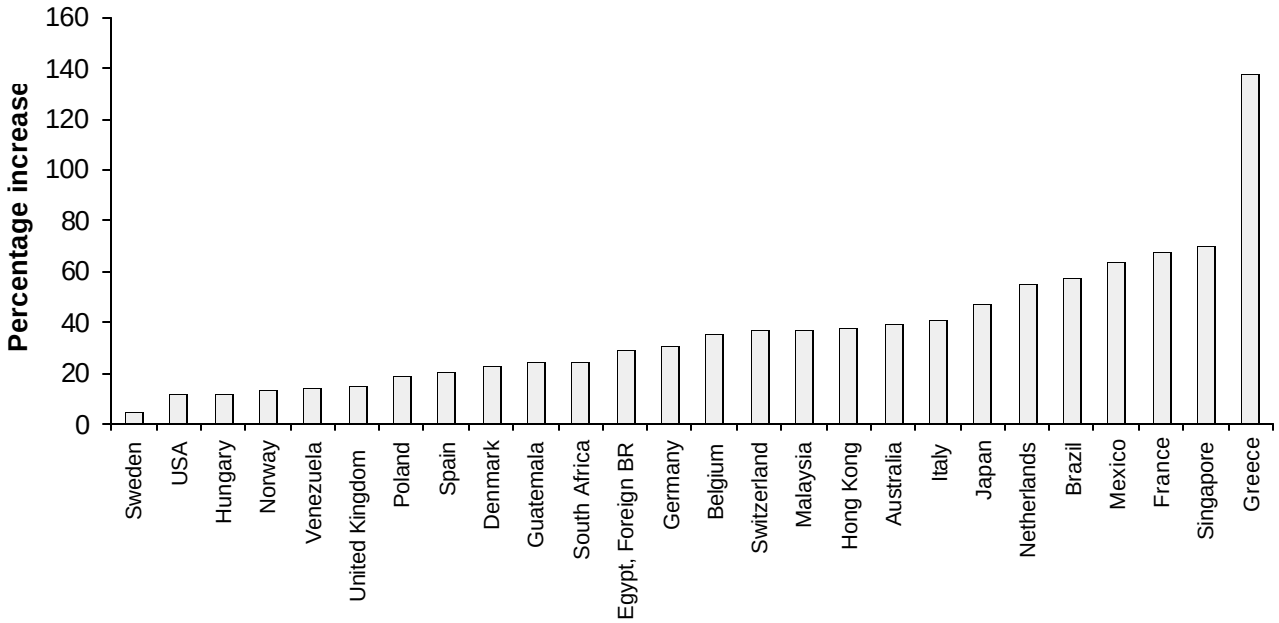
Disease		Mortality per 100 000 persons	
		1998 Preliminary data	2010 Targeted
Bronchogeticenic	Men	11	10
	Women	3.8	3.5
Carcinoma	Men	1.1	0.9
	Women	0.5	0.3
Respiratory illness	Men	91.2	86.2
	Women	57	52
Coronary heart disease	Men	109.2	99.2
	Women	55.8	45.8
Stroke	Men	153.3	148.3
	Women	127.6	122.6
Cardiovascular	Men	527.5	522.5
	Women	439.6	434.6

Source: Ministry of Health and Population 2001.

Pricing has not been a major control measure in Egypt. Comparing the increase in the prices of cigarettes in Egypt with the increase in prices of cigarettes in other countries one can conclude

from the data in Figure 8 that the 24.5% percentage increase in the prices of cigarettes in Egypt between 1991 and 1995 was relatively lower than in most other countries. Of the countries shown in Figure 8, only Hungary, Norway, Poland, UK, the United States and Venezuela had smaller increases. Since price increases are a powerful policy tool for reducing consumption, especially of young people, this remains an important potential tool for the government of Egypt to use. Higher cigarette prices would both decrease cigarette consumption and increase government revenues. Both of these are important and desirable outcomes.

Figure 8. Increase in prices of local cigarettes in selected countries, 1991-95



Source: Annex Table A6.3.

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APPENDIX TABLES

Part I.

Table A1.1 Annual cigarette consumption, Egypt

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 A1.2. Consumption of cigarettes, 1990–98

Years	Million pieces	% annual change	Index (1990 = 100.0)
1990	39.177	–7.8	100.0
1991	40.850	+4.3	104.3
1992	37.686	–7.7	96.2
1993	37.873	+0.5	96.7
1994	37.979	+0.3	96.9
1995	41.825	+9.3	106.0
1996	45.250	+9.0	115.5
1997	50.000	+10.5	127.6
1998	57.500	+15.0	146.8

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

Table A1.3. Per capita consumption, pieces per year and pieces per week 1990–1998

Year	Pieces/year	Pieces/week	Pieces/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 Co and USDA data. UN

Note: Based on total population.

Table A1.4. Names and addresses of tobacco companies in Egypt

Name of company	Address
Public sector	
1. Eastern Company for Tobacco & Cigarettes	45 Al Ahram St., El Haram, Giza
Private sector	
1. Upper Egypt Company for Tobacco	Misr Bank St., Mallawy, Minya
2. El. Warda Company for Tobacco	The beginning of Quesna Road, Shebin El Koum, Menoufeia.
3. Abo El Nasr Company for Tobacco	Ibrahim Khalil St., Quesna, Menoufeia
4. El Nakhla Factory for Tobacco	33 Mustafa Kamel St., Shebin El Koum, Menoufeia.
5. Mohamed Abdel Wahab Factory for Tobacco	El Mansoura, Dakahleia.
6. El. Giza Factory for Tobacco	El Mansoura, Dakahleia.
7. Ibrahim Osman Company For Tobacco	El Mansoura, Dakahleia.
8. Kholfaa El Mahdi Factory	El Gamaleia, El Mansoura, Dakahleia.
9. Hossien Hamad Factory for Tobacco	Nahdet Misr St., Dekernis, Dakahleia.
10. Hegazy Factory for Tobacco	6 Hassan Hosni Than, Mansoura Dakahleia
11. El Embaby Company for Tobacco	4 Awadein St., Mustafa Kamel St., Dakahleia
12. Saleh Ahmed Shaaban Factory	8 Sheikha Eisha St., El Mansoura, Dakahleia
13. Galal Abdel Wanis Factory for Tobacco	13 Ahmed Badawi St., Shubra, Cairo
14. Ali Kamel Factory for Tobacco	5 El Helmeia El Kadima, El Khalifa, Cairo
15. El Shebeishy Factory for Tobacco	Houda El Sharkawy, El Darb El Ahmer, Cairo
16. Elisabeth Factory for Tobacco	53 Abo El Gaypushi, El Gammaleia, Cairo
17. Misr for Tobacco & Cigarettes Company	1 Sheikh Salama Hegazy, Sayeda Zeinab
18. El. Sharkeia for Tobacco Trade	3 Ali Beik El Naggar St., Rod El Farag, Cairo
19. El. Berimo Factory for Tobacco	4 Darb El Barki, Klot Beik, Cairo
20. Haroon El Rashid Company for Tobacco	362 El Teraa El Bolkeia St., Cairo.
21. Ebn El Niel Factory For Tobacco	Sekket El Zaher St., Bab El Shaareia, Cairo
22. Hatra Abo Yousef Company for Tobacco	1 Saad Zaghloul, El Fayoum
23. El Kanal Factory for Tobacco	4 Abdel Moneim Riad St., El Sharkeia
24. El Shark for Tobacco & Cigarettes	El Horreia St., Menia El Kamh, El Sharkeia
25. Abo Makas Factory for Tobacco	El Gomhoreia St., Fakos, El Sharkeia
26. El Henawi Company for Tobacco	4 El Hennawi St., Damanhor, Beheira
27. Abo Teeg Factory for Tobacco	Mohamed Mahmoud Basha St., Abo Teeg, Assiut
28. Karawn El Shark for Tobacco	Handasset El Ray St., Menia El Kamh, El Sharkeia
29. Arab Factory for Tobacco	12 El Malek St., El Matareia, Cairo

Table A1.5. Production of tobacco by sector

Type	Year	Public sector		Private sector		Total	
Cigarette		Quantity	Value	Quantity	Value	Quantity	Value
	95–96	48847	3388288	–	–	48847	3388288
	96–97	53951	3730439	–	–	53951	3730439
	97–98	56700	3881747	–	–	56700	3881747
Cigar	95–96	3	682	–	–	3	682
	96–97	3	660	–	–	3	660
	97–98	3	684	–	–	3	684
???O	95–96	279	10286	626	22545	905	32831
Smoke	96–97	192	6956	539	18975	731	25931
?	97–98	426	8996	513	18263	939	27259
Moassel	95–96	13894	140593	12034	148170	25928	288763
smoke	96–97	15997	196421	13804	173077	29801	369498
	97–98	16694	204543	13126	177201	29820	381744
Smoke	95–96	–	–	271	8918	271	8918
(damga)	96–97	–	–	336	11266	336	1266
	97–98	–	–	287	9444	287	9444
Pipe	95–96	6	395	–	–	6	395
smoke	96–97	5	365	–	–	5	365
	97–98	5	392	–	–	5	392
Snuff	95–96	–	–	84	2859	84	2859
	96–97	–	–	110	3736	110	3736
	97–98	–	–	84	2921	84	2921
Total	95–96	–	3540244	–	182493	–	3722736
	96–97	–	3934841	–	207054	–	4141895
	97–98	–	4096362	–	207829	–	4304191

Source: CAPMAS-Annual Report on Production,1999

Table A1.6. **Distribution of labour force by sector (1000 workers)**

Sector	**1990–89**	**1991–90**	**1992–91**	**1993–92**	**1994–93**	**1995–94**	**1996–95**	**1997–96**	**1998–97**	**1999–98**
Agricultural	4664.00	4500.0	4585.0	4620.00	4682.0	4744.0	4812.0	4747.0	4820.0	4899.0
Manufacturing and mining	1971.1	2036.0	1838.0	1876.0	1952.0	2031.0	2099.0	2038.0	2182.0	2305.0
Oil and products	35.8	37.0	37.0	38.0	40.0	41.0	42.0	43.0	44.0	46.0
Construction	655.9	666.0	871.0	914.0	982.0	1038.0	1100.0	1140.0	1215.0	1294.0
Electricity	93.1	98.0	104.0	106.0	110.0	144.0	118.0	120.0	124.0	129.0
Productive services sector	2079.9	2181.0	22287.0	2260.0	2351.0	2450.0	2553.0	2528.0	2622.0	2716.0
Social services sectors	3747.9	4009.0	4079.0	4177.0	4319.0	4461.0	4616.0	5209.0	5337.0	5480.0
Total	13247.7	13527.0	13742.0	14011.0	14436.0	14879.0	15340.0	15825.0	16344.0	16869.0

Source: Economic Bulletin, National Bank of Egypt , 2000

Table A1.7 . Consumption trends for foreign cigarettes in Egypt, 1990–99

Quantity in thousands cigarettes	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Companies producing foreign cigarettes and date of industry beginning and kinds										
Philip Morris -Marlboro -Light -L&M	1 339 470 0 0	1 505 150 0 0	1 775 690 0 20 520	2 061 000 82 250 31 530	2 102 000 2 102 000 128 250	2 437 400 217 500 117 670	2 706 000 307 250 270 250	3 147 500 415 750 418 750	4 589 750 554 000 1 196 750	6 605 000 714 500 1 606 000
Rothman World Co. 2–1986 -Rothman -Sial Sas	127 900 30 340 0	167 110 24 950 0	77 340 18 570 0	60 010 16 240 15 720	43 080 14 130 5010	48 680 12 610 890	46 420 13 100 10	43 300 25 810 0	54 950 15 730 0	53 140 15 580 0
Reynolds Co. 12–1985 Lel' -Gold Coast -ton	12 930 0 50 520	7230 0 84 400	5930 18 920 3040	290 52 080 1830	3200 20 610 550	6530 26 200 50	5310 15 720 230	1000 5600 50	0 0 0	0 0 0
Brown & Wilson Co. 7–1986 -Merit	90 090	18 730	29 290	30 100	30 200	23 850	26 640	24 540	22 230	24 610
British American 1–1987 -Boree -(Edg-3–1994)	12 700 0	3020 0	2950 0	1000 0	0 18 470	0 1500	0 0	0 0	0 0	0 0
Gallaher Co 5–1987 -Silk Cut -Carlton	31 270 6330	32 650 6070	31 200 6200	30 600 7300	30 770 10 420	20 080 10 420	19 550 9360	18 330 11 710	17 820 8740	16 040 9310
% of total cigarettes	4.8%	5%	5.5%	5.8%	6.1%	6.8%	7.3%	7.9%	11.4%	16.3%
Total	17 101 550	1 849 310	1 989 650	2 389 950	2 465 410	2 923 770	3 419 840	4 112 340	6 459 970	9 044 180

PART II: Analysis at the Micro Level

Table A2.1A. Index numbers for consumer prices in urban areas (1995 –96 = 100)

Years	Food, drink and tobacco								Clothes & cloth	Residence & fuel	Furniture, apparatus & household services	Health care	Transportation & communications	Sports, culture & education	Goods & various services	General index number
	Seeds & strachies	Meat & fowl	Fish	Milk, cheese & eggs	Fruits	Vegetables	Herbs	Index number of food, drink & tobacco								
1997	000	000	000	000	000	000	000	113.1	114.0	102.4	106.0	108.2	110.9	111.5	121.7	111.9
1998	105.8	111.8	137.0	110.1	156.8	141.6	112.3	117.5	115.6	102.4	107.2	111.3	112.7	122.3	127.8	115.9
1999	111.2	117.2	143.5	112.2	141.3	168.6	113.2	121.3	117.9	102.8	108.1	113.9	115.8	129.7	135.0	119.6
1998																
Oc.t	105.2	111.4	135.7	110.1	169.2	144.2	112.1	118.4	114.7	102.4	107.2	111.3	112.7	121.7	127.8	116.2
Nov.	105.4	111.4	137	110.1	160.7	139.6	112.3	117.4	114.7	102.4	107.2	111.3	112.7	122.3	127.8	115.8
Dec.	105.8	111.8	137	110.1	156.8	141.6	112.3	117.5	115.6	102.4	107.2	111.3	112.7	122.3	127.8	115.9
1999																
Oct	111.2	115.3	142.6	112.2	164.6	137.0	113.2	120.1	117.9	102.8	108.1	113.9	114.4	129.7	135.0	118.9
Nov	111.2	116.2	142.6	112.2	138.5	170.5	113.2	120.8	117.9	102.8	108.1	113.9	115.8	129.7	135.0	119.3
Dec	111.2	117.2	143.5	112.2	141.3	168.6	113.2	121.3	117.9	102.8	108.1	113.9	115.8	129.7	135.0	119.6

Source: National Bank of Egypt, Economic Bulletin,2000

Table A2.1B. Index numbers for consumers' prices in rural areas (1995–96 = 100)

Years	Food, drink and tobacco							Clothes & cloth	Residence & fuel	Furniture, apparatus & household services	Health care	Transportation & Communications	Sports, Culture & Education	Goods & various services	General Index number
	Seeds & strachies	Meat & fowl	Milk, cheese & eggs	Fruits	Vegetables	Herbs	Index number of food, drink & tobacco								
1997	000	000	000	000	000	000	111.0	108.0	102.8	102.1	112.9	103.0	112.7	108.7	109.3
1998	110.4	111.4	108.8	144.7	139.7	110.8	113.9	109.5	102.8	102.3	115.0	103.5	124.0	110.5	112.1
1999	113.0	113.3	110.2	132.2	144.9	111.2	115.4	111.2	103.1	102.9	119.2	104.2	129.9	122.1	114.1
1998															
Sep	110.4	111.5	108.8	148.7	145.6	110.7	114.7	109.5	102.8	102.3	115.0	103.5	123.6	110.5	112.5
Nov	110.4	111.4	108.8	144.7	139.7	110.8	113.9	109.5	102.8	102.3	115	103.5	124	110.5	112.1
1999															
Sep	113.0	113.3	108.8	140.9	143.4	111.2	115.6	111.2	103.1	102.9	119.2	104.2	126.3	122.1	114.0
Nov	113.0	113.3	110.2	132.2	144.9	111.2	115.4	111.2	103.1	102.9	119.2	104.2	129.9	122.1	114.1

Source: Source:National Bank of Egypt, Economic Bulletin, 2000
(000): Unavailable

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Table A2.2. Expenditure of households on tobacco by educational level of head of household, 1995–96

Area	Illiterate	Read and write	Primary certif.	Second certif.	Post-second graduate	Univ. graduate	Post-univ. graduate	Below age and not	Total
TOTAL									
Cigarettes & cigars	1187910	907310	256888	452547	92636	280499	12408	0	3190198
Tobacco & tombak	53592	25744	4334	4620	1854	60	0	0	90204
No. of households	3171	2081	596	981	193	517	15	0	7554
No. of persons	19057	12025	3225	4948	939	2256	58	0	42508
Food and beverages	10719869	7528106	2110284	3501564	726759.6	2288583	81252.6	0	26956418
Total expenditure	19772981	14887980	4391112	7513467	1756842	5847909	266768	0	54437059
URBAN									
Cigarettes & cigars	439516	461481	163374	262571	61682	222673	12048	0	1623345
Tobacco & tombak	8595	9594	1998	2202	180	0	0	0	22569
No. of households	898	870	339	532	116	387	14	0	3156
No. of persons	4675	4340	1675	2462	507	1563	53	0	15275
Food and beverages	3078612	3152864	1275685	2005011	464929.2	1807915	76927.2	0	11861943
Total exp	6188466	6710398	2753145	4477457	1243440	4801020	260026	0	26433952
RURAL									
Cigarettes & cigars	748394	445829	93514	189976	30654	57826	360	0	1566853
Tobacco & tombak	44997	16150	2336	2418	1674	60	0	0	67635
No. of households	2273	1211	257	449	77	130	1	0	4398
No. of persons	14382	7685	1550	2486	432	693	5	0	27233
Food and beverages	7641257	4375242	834598.6	1496553	261830.4	480668.4	4325.4	0	15094475
Total expenditure	13584515	8177582	1637967	3036010	513402	1046889	6742	0	28003107

Source: Household Budget Survey 1995 –96

Table A2.3. Expenditure of households on tobacco by work status, 1995–96

Area	Wage earner	Self employed	Employer	Family labour	Recently unemp	Long-term unemp	Out of labour force	Total
TOTAL								
Cigarettes & cigars	1450034	781422	410070	4896	1344	3684	538748	3190198
Tobacco & tombak	29716	33896	9330	0	0	0	17262	90204
No. of households	3549	1845	1048	8	3	10	1091	7554
No. of persons	19488	11931	5608	56	8	59	5358	42508
Food and beverages	11930018	7558917	3560813	34255.2	4231.2	29019	3839165	26956418
Total expenditure	24522885	14900422	6974649	57899	10413	49406	7921385	54437059
URBAN								
Cigarettes & cigars	766317	282119	202635	1638	1344	2244	367048	1623345
Tobacco & tombak	8424	6231	3558	0	0	0	4356	22569
No. of households	1584	487	417	3	3	6	656	3156
No. of persons	7615	2654	2094	20	8	38	2846	15275
Food and beverages	5620672	2256837	1542999	13936.8	4231.2	17037	2406231	11861944
Total exp	12549134	5452683	3185482	26501	10413	27392	5182347	26433952
RURAL								
Cigarettes & cigars	683717	499303	207435	3258	0	1440	171700	1566853
Tobacco & tombak	21292	27665	5772	0	0	0	12906	67635
No. of households	1965	1358	631	5	0	4	435	4398
No. of persons	11873	9277	3514	36	0	21	2512	27233
Food and beverages	6309346	5302080	2017814	20318.4	0	11982	1432935	15094475
Total expenditure	11973751	9447739	3789167	31398	0	22014	2739038	28003107

Source: Household Budget Survey 1995 –96

Table A2.4. Expenditure of households on tobacco by activity of household head, 1995–96

Area	1	2	3	4	5	6	7	8	9	NA	total
TOTAL											
Cigarettes & cigars	668116	17199	400499	18889	223630	378764	252102	64519	627432	539048	3190198
Tobacco & tombak	37844	30	8066	132	4146	8637	4269	180	9818	17082	90204
No. of households	2052	42	887	48	501	790	541	122	1479	1092	7554
No. of persons	13152	237	4766	297	2697	4328	2936	590	8118	5354	42508
Food and beverages	7250685	185955.6	3105975	180658.8	1630757	3135340	1926844	526866.7	5180434	3832903	26956419
Total expenditure	7250685	185955.6	3105975	180658.8	1630757	3135340	1926844	526866.7	5180434	3832903	26956419
URBAN											
Cigarettes & cigars	50904	10506	268703	9931	138433	267183	148672	45591	315570	367852	1623345
Tobacco & tombak	2598	30	3318	0	1446	5034	2187	0	3780	4176	22569
No. of households	127	21	526	19	271	508	294	84	648	658	3156
No. of persons	768	113	2617	100	1312	2628	1444	364	3078	2851	15275
Food and beverages	484173.2	82838.4	1890679	66793.2	935991.7	2138031	1090761	382122	2382853	2407720	11861945
Total exp	984815	253666	4111602	138977	2070277	4863120	2363459	939935	522663	5185438	26433952
RURAL											
Cigarettes & cigars	617212	6693	131796	8958	85197	111581	103430	18928	311862	171196	1566853
Tobacco & tombak	35246	0	4748	132	2700	3603	2082	180	6038	12906	67635
No. of households	1925	21	361	29	230	282	247	38	831	434	4398
No. of persons	12384	124	2182	197	1385	1700	1492	226	5040	2503	27233
Food and beverages	6766511	103117.2	1215296	113865.6	694765.2	997309.8	836083.1	144744.7	2797599	1425183	15094475
Total expenditure	11864014	188285	2306739	231255	1337868	1948838	1657057	391051	5353925	2724075	28003107

Source:Household Budget Survey 1995 –96

Table A2.5. Annual expenditure of households on tobacco by expenditure intervals, 1995–96

Area	–1200	1200–	3200–	5600–	10000 –	14000–	Total
TOTAL							
Cigarettes & cigars	396	105374	831197	1497217	435450	320564	3190198
Tobacco & tombak	3	4743	18605	46195	12174	8484	90204
No. of households	4	520	2585	3266	739	440	7554
No. of persons	5	1624	12712	20260	4963	2944	42508
Food and beverages	3842	1371620	11685394	23908512	8533333	8934358	54437059
Total expenditure							
URBAN	0	36658	335220	725464	276716	249287	1623345
Cigarettes & cigars	0	120	4431	10890	4230	2898	22569
Tobacco & tombak	1	144	855	1398	433	325	3156
No. of households	1	370	3525	7237	2353	1791	15275
No. of persons	622.2	197594.4	1999089	5072109	2228179	2364351	11861945
Food and beverages	1037	386042	3907536	10431457	5045008	6662872	26433952
Total exp							
RURAL	396	68716	495977	771753	158734	71277	1566853
Cigarettes & cigars	3	4623	14174	35305	7944	5586	67635
Tobacco & tombak	3	376	1730	1868	306	115	4398
No. of households	4	1254	9189	13023	2610	1153	27233
No. of persons	1642.8	557879.8	4413928	7392541	1802108	926374.9	15094475
Food and beverages	2805	985578	7777858	13477055	3488325	2271486	28003107
Total expenditure							

Source: Household Budget Survey 1995/ 19996

Table A2.6. Household expenditure on tobacco by expenditure quintile, 1999–2000

Expenditure Category	Expenditure on			Gross expenditure	Number of	
	Cigar	Tobacco	Food		Families	Individuals
Total						
1000–	144	0	505.2	1038.8	1	1
1200–	576	720	6736.2	12616.94	9	12
1600–	6848.4	4545	65983.8	118002.7	56	110
2400	54449.4	18590.40	374899.6	713711.3	246	654
3200–	182452.2	46726.20	1236084	2411544	665	2176
4000–	405803.3	70350.60	2714639	5341983	1206	4631
4800–	639226.3	99736.20	4616571	9240120	1769	7647
5600–	1209982	171058.8	9498264	19231482	3098	14889
6800–	1397548	168883.8	11427315	23586888	3193	16472
8000–	2324816	255305.0	19039593	40898953	4571	25127
10000–	1732425	147065.4	14777396	32900823	3002	17409
12000–	1266186	79631.40	10911257	24983884	1935	11679
14000–	4243729	203946.0	32363346	1.03+08	4339	25288
Urban						
1000–	115.20	0	674.4	1501.6	1	3
1200–	2473.20	588	18540.0	34139.3	17	36
1600–	26103.60	4248	127243.2	266443.0	91	277
2400	74883.48	11313	407616.6	841845.4	232	718
3200–	168760.8	20903.4	1006177	2095070	473	1671
4000–	300722.2	29273.4	1767114	3779085	722	2802
4800–	599082.4	52737	3875797	8367954	1347	5697
5600–	753037	49794.6	5211760	11348121	1535	6990
6800–	1442982	84184.8	10086055	22807614	2543	12398
8000–	1448427	63422.4	8817623	20562910	1872	9630
10000–	925238	35604	7106010	17027960	1316	6981
12000–	3662398	129475.2	26264191	87752207	3544	18510
Rural						
1000–	144	0	505.2	1038.8	1	1
1200–	460.8	720	6061.8	11115.34	8	9
1600–	4375.2	3957	47443.8	83863.4	39	74
2400	28345.8	14342.4	247656.4	447268.3	155	427
3200–	107568.7	35413.2	828467.2	1569699	433	1458
4000–	237042.5	49447.2	1708461	3246914	733	2960
4800–	338504.2	70462.8	2849458	5461034	1047	4845
5600–	610900	118321.8	5622467	10863529	1751	9192
6800–	644510.9	119089.2	6215556	12238767	1658	9482
8000–	881833.8	141120.2	8953537	18091339	2028	12729
10000–	582270.5	83643	5950863	12316211	1128	7779
12000–	338846.3	44027.4	3794211	7930758	617	4698
14000–	578041.1	74470.8	6070935	14764116	791	6778

Source:Household Budget Survey 1999 –2000

Table A2.7. Expenditure of households on tobacco by educational level of household, 1999 –2000

Education category	Expenditure on			Gross expenditure	Number of	
	Cigar	Tobacco	Food		Families	Individuals
Total						
Illiterate	3849582	594409.4	33800439	69965380	8197	46934
Read & write	3156742	343977.0	26408863	59091511	6044	33158
Primary	1336450	90401.4	10105921	24264761	2315	11669
Secondary	2362102	121798.2	17585088	43999204	4110	19271
Post secondary	439936.8	22252.8	3406235	8839652	755	3466
University	2187370	55260	14877244	51997202	2563	11196
Post uni.	132003.6	8460	848799.1	3875773	106	441
Urban						
Illiterate	2010546	173508	14651313	32523715	3458	18155
Read & write	1892699	123614.4	13867042	33217770	3095	15551
Primary	1013858	53216.4	7208758	18022665	1576	7633
Secondary	1715968	69063	12307544	32330396	2738	12238
Post secondary	337047.0	12384	2563664	6951388	532	2393
University	2006650	41298	13282061	48099142	2195	9290
Post uni.	127455.6	8460	808420.2	3739774	99	403
Rural						
Illiterate	1839037	420901.4	19149126	37441665	4739	28779
Read & write	1261721	220362.6	12525907	25835952	2946	17591
Primary	322592.5	37185	2897163	6242096	739	4036
Secondary	642824.6	52735	5254238	11610322	1368	7013
Post secondary	102889.8	9868.8	842571	1888264	223	1073
University	179231.8	13962	1586238	3871355	367	1902
Post uni.	4548	0	40378.92	135998.5	7	38

Source:Household Budget Survey 1999 –2000

Table A2.7. **Expenditure of household on tobacco by employment status of Household, 1999–2000**

Employment status	Expenditure on			Gross expenditure	Number of	
	Cigar	Tobacco	Food		Families	Individuals
Total						
Unemployment	2214555	131971.2	15201642	38406525	3422	16066
Wage earner	6492058	470998.8	50773954	1.25E+08	11994	61322
Self employed	3276832	488250.8	29510488	72464499	5896	34622
Employer	1476611	144612.0	11492635	26045479	2766	14045
Family labour	4130.4	726	53871	96223.55	12	80
Urban						
Unemployment	1840734	72414	12082539	31717081	2583	11730
Wage earner	4500124	197091.6	32437162	86404527	7212	34473
Self employed	1808371	138005.4	13199508	40207487	2274	11524
Employer	953805.6	73852.8	6950339	16526079	1621	7910
Family labour	1188	180	19252.8	29675.3	3	26
Rural						
Unemployment	372668.4	59557.2	3114687	6677892	838	4329
Wage earner	1987455	273907.2	18301987	38531506	4776	26820
Self employed	1466973	350245.4	16302036	32230307	3621	23094
Employer	522805.7	70759.2	4542295	9519399	1145	6135
Family labour	2942.4	546.0	34618.2	66548.25	9	54

Source:Household Budget Survey 1999 –2000

Table A2.9. **Expenditure of household on tobacco by economic activities of household, 1999–2000**

Economic activity	Expenditure on			Gross Expenditure	Number of	
	Cigar	Tobacco	Food		Families	Individuals
Total						
1	4084864	565313	35986434	79778508	8198	45273
2	752735.2	50167.2	5787984	14444641	1309	6659
3	756348.8	43014.6	5674052	14727123	1261	6253
4	250802.2	16905	1842639	4361140	421	2033
5	127212	95644 .2	9137177	23366059	2237	11208
6	2186493	177823.8	16153545	42832573	3383	17012
7	1369741	90275.4	9962182	24501402	2234	11279
8	1505994	103170.6	12040184	31340506	2643	14093
9	963875.4	61877.4	7864045	2068326	1787	9081
10	320620.8	32367.6	2584346	5992204	617	3244
Urban						
1	2146660	122925	15188799	38722181	3234	15418
2	562375.8	26105.4	4059796	10784370	864	4169
3	627261.6	26580.6	4526594	12232529	955	4591
4	205363.6	13164	1473519	3573851	329	1557
5	863638.6	47238	5881736	16501027	1328	6369
6	1772124	115694.4	12461467	34980897	2475	11943
7	1017808	53303.4	7069773	18251153	1524	7312
8	1009058	38741.4	7403107	21332512	1534	7418
9	661918	19506	4868023	14230978	1044	4881
10	238015.8	18285.6	1755985	4275351	406	2005
Rural						
1	1937052	442388	20793219	41044774	4963	29848
2	189764.2	24061	1723973	3644288	444	2486
3	127565	16434	1127078	2449167	303	1645
4	44862.6	3741	364624.8	777138.2	91	473
5	407287.6	48406.2	324926	6851871	908	4834
6	412880.8	62129.4	3683133	7824970	907	5065
7	351933.6	36972	2892409	6250249	710	3967
8	496936.2	64429.2	4637077	10007994	1109	6675
9	301957.4	42371.4	2996022	6458348	743	4200
10	82605	14082	8283613	1716853	211	1239

Source:Household Budget Survey 1999 –2000

PART THREE: Elasticity Analysis

Table A3.1. Expenditure elasticity of tobacco from household budget by expenditure quartile (total Egypt), 1995–96

Coefficients (a)						
Models		**Unstandardized coefficients**		**Standardized coefficients**	***t***	**Sig.**
		B	**Std. Error**	**Beta**		
Total						
Q1	(Constant)	–1.142	0.694		–1.646	0.100
	LNTOTEXP	0.831	0.086	0.270	9.633	.000
Q2						
	(Constant)	–.282	1.229		–0.229	0.819
	LNTOTEXP	0.719	0.145	0.111	4.963	.000
Q3						
	(Constant)	0.879	1.203		0.731	0.465
	LNTOTEXP	0.584	0.137	0.091	4.275	.000
Q4						
	(Constant)	2.658	0.367		7.245	.000
	LNTOTEXP	0.387	0.039	0.206	9.854	.000
Urban						
Q1	(Constant)	–0.406	1.027		–0.395	0.693
	LNTOTEXP	0.753	0.126	0.255	5.990	.000
Q2						
	(Constant)	1.570	1.671		0.940	0.348
	LNTOTEXP	0.517	0.194	0.091	2.661	0.008
Q3						
	(Constant)	4.008	1.639		2.446	0.015
	LNTOTEXP	0.243	0.183	0.044	1.326	0.185
Q4						
	(Constant)	3.465	0.529		6.545	.000
	LNTOTEXP	0.309	0.056	0.184	5.558	.000
Rural						
Q1	(Constant)	–1.841	0.940		–1.959	0.051
	LNTOTEXP	0.915	0.118	0.295	7.758	.000
Q2						
	(Constant)	0.268	1.684		0.159	0.874
	LNTOTEXP	0.645	0.201	0.096	3.216	0.001
Q3						
	(Constant)	2.085	1.814		1.149	0.251
	LNTOTEXP	0.438	0.209	0.059	2.100	0.036
Q4						
	(Constant)	2.670	0.565		4.725	.000
	LNTOTEXP	0.377	0.062	0.162	6.112	.000

a. Dependent variable: LNTOBTOT

Source: CAPMAS Household Budget Survey 1995–96

Table A3.2. Expenditure elasticity of tobacco from household budget by educational level, 199/96

Coefficient (a)						
Education		**Unstandardized coefficients**		**Standardized coefficients**	***t***	**Sig.**
Total		*B*	Std. error	Beta		
Total Edu1	(Constant)	0.413	0.171		2.414	0.016
	LNTOTEXP	0.634	0.020	0.406	32.200	.000
Total Edu2	(Constant)	2.038	0.462		4.415	.000
	LNTOTEXP	0.449	0.053	0.331	8.545	.000
Total Edu3	(Constant)	2.761	0.295		9.373	.000
	LNTOTEXP	0.373	0.033	0.311	11.200	.000
Total Edu4	(Constant)	2.719	0.349		7.802	.000
	LNTOTEXP	0.377	0.038	0.397	9.955	.000
Urban						
Urbedu1	(Constant)	1.253	0.273		4.588	.000
	LNTOTEXP	0.555	0.031	0.391	17.866	.000
Urbedu2	(Constant)	1.538	0.586		2.624	0.009
	LNTOTEXP	0.510	0.066	0.388	7.723	.000
Urbedu3	(Constant)	2.436	0.375		6.491	.000
	LNTOTEXP	0.411	0.042	0.360	9.810	.000
Urbedu4	(Constant)	2.795	0.416		6.722	.000
	LNTOTEXP	0.370	0.045	0.383	8.280	.000
Rural						
RualEdu1	(Constant)	0.416	0.218		1.908	0.056
	LNTOTEXP	0.625	0.025	0.388	24.804	.000
RualEdu2	(Constant)	3.502	0.784		4.469	.000
	LNTOTEXP	0.273	0.090	0.186	3.029	0.003
RualEdu3	(Constant)	3.563	0.504		7.075	.000
	LNTOTEXP	0.278	0.058	0.206	4.809	.000
RualEdu4	(Constant)	2.955	0.795		3.715	.000
	LNTOTEXP	0.347	0.089	0.323	3.878	.000
a. Dependent variable: LNTOBTOT						

Source: CAPMAS Household Budget Survey 1995–96

Table A3.3. Expenditure elasticity of tobacco from household budget by work status, 1995/96

Coefficient (a)						
		Unstandardized coefficients		Standardized coefficients	*t*	Sig.
Model		*B*	Std. error	Beta		
Total						
Totalwork1	(Constant)	1.716	0.192		8.954	.000
	LNTOTEXP	0.485	0.022	0.348	22.095	.000
Totawork2						
	(Constant)	0.891	0.257		3.462	0.001
	LNTOTEXP	0.577	0.029	0.420	19.876	.000
Totalwork3						
	(Constant)	1.527	0.377		4.054	.000
	LNTOTEXP	0.504	0.043	0.339	11.643	.000
Totalwork4						
	(Constant)	–7.178	3.009		–2.385	0.054
	LNTOTEXP	1.521	0.344	0.875	4.417	0.004
Urban						
WorkUrb1	(Constant)	2.774	0.259		10.695	.000
	LNTOTEXP	0.375	0.029	0.306	12.798	.000
WorkUrb2						
	(Constant)	2.696	0.424		6.361	.000
	LNTOTEXP	0.392	0.046	0.359	8.471	.000
WorkUrb3						
	(Constant)	2.455	0.561		4.376	.000
	LNTOTEXP	0.413	0.063	0.304	6.512	.000
WorkUrb4						
	(Constant)	–6.789	0.726		–9.355	0.068
	LNTOTEXP	1.433	0.082	0.998	17.504	0.036
Rural						
WorkRur1	(Constant)	1.402	0.291		4.822	.000
	LNTOTEXP	0.513	0.034	0.325	15.237	.000
WorkRur2						
	(Constant)	0.655	0.348		1.881	0.060
	LNTOTEXP	0.599	0.040	0.379	15.071	.000
WorkRur3						
	(Constant)	1.783	0.521		3.425	0.001
	LNTOTEXP	0.465	0.060	0.293	7.690	.000
WorkRur4						
	(Constant)	–10.759	5.675		–1.896	0.154
	LNTOTEXP	1.962	0.655	0.866	2.995	0.058

a. Dependent variable: LNTOBTOT

Source: CAPMAS Household Budget Survey 1995–96

Table A3.4. Expenditure elasticity of tobacco from household budget by expenditure quartile, 1999/2000

Coefficient (a)						
		Unstandardized coefficients		**Standardized coefficients**	***t***	**Sig.**
Models		***B***	**Std. error**	**Beta**		
Total						
Q1	(Constant)	0.417	0.392		1.064	0.288
	LNTOTEXP	0.638	0.047	0.204	13.686	.000
Q2						
	(Constant)	1.609	0.727		2.213	0.027
	LNTOTEXP	0.496	0.082	0.076	6.030	.000
Q3						
	(Constant)	0.545	0.669		0.815	0.415
	LNTOTEXP	0.616	0.073	0.102	8.452	.000
Q4						
	(Constant)	0.746	0.191		3.898	.000
	LNTOTEXP	0.596	0.020	0.349	30.477	.000
Urban						
Q1	(Constant)	0.756	0.505		1.496	0.135
	LNTOTEXP	0.605	0.059	0.198	10.211	.000
Q2						
	(Constant)	0.511	0.934		0.547	0.585
	LNTOTEXP	0.629	0.104	0.101	6.041	.000
Q3						
	(Constant)	1.238	0.837		1.480	0.139
	LNTOTEXP	0.547	0.090	0.098	6.092	.000
Q4						
	(Constant)	1.442	0.251		5.736	.000
	LNTOTEXP	0.530	0.025	0.326	21.054	.000
Rural						
Q1	(Constant)	–1.136	0.629		–1.804	0.071
	LNTOTEXP	0.824	0.076	0.258	10.861	.000
Q2						
	(Constant)	1.375	1.270		1.083	0.279
	LNTOTEXP	0.515	0.146	0.070	3.522	.000
Q3						
	(Constant)	2.378	1.256		1.893	0.058
	LNTOTEXP	0.403	0.140	0.053	2.877	0.004
Q4						
	(Constant)	0.617	0.141		4.368	.000
	LNTOTEXP	0.609	0.015	0.366	41.268	.000
a. Dependent variable: LNTOBTOT						

Source: CAPMAS Household Budget Survey 1999–2000

Table A3.5. Expenditure elasticity of tobacco from household budget by educational level, 1999/2000

Coefficient (a)						
Model		**Unstandardized coefficients**		**Standardized coefficients**	***t***	**Sig.**
		B	**std. error**	**Beta**		
Total						
Edu 1	(Constant)	0.511	0.109		4.697	.000
	LNTOTEXP	0.620	0.012	0.395	51.370	.000
Edu2						
	(Constant)	1.252	0.254		4.931	.000
	LNTOTEXP	0.543	0.028	0.377	19.577	.000
Edu3						
	(Constant)	1.516	0.157		9.629	.000
	LNTOTEXP	0.513	0.017	0.394	29.876	.000
Edu4						
	(Constant)	1.052	0.173		6.071	.000
	LNTOTEXP	0.566	0.018	0.523	31.682	.000
Urban						
Edu1	(Constant)	0.556	0.155		3.587	.000
	LNTOTEXP	0.624	0.017	0.413	36.693	.000
Edu2	(Constant)	1.550	0.319		4.852	.000
	LNTOTEXP	0.515	0.035	0.352	14.907	.000
Edu3	(Constant)	1.637	0.192		8.517	.000
	LNTOTEXP	0.503	0.021	0.390	24.248	.000
Edu4	(Constant)	1.258	0.191		6.596	.000
	LNTOTEXP	0.547	0.019	0.506	28.071	.000
Rural						
Edu1	(Constant)	1.074	0.156		6.885	.000
	LNTOTEXP	0.549	0.017	0.337	31.402	.000
Edu2	(Constant)	1.747	0.462		3.779	.000
	LNTOTEXP	0.478	0.052	0.323	9.275	.000
Edu3	(Constant)	1.957	0.320		6.108	.000
	LNTOTEXP	0.459	0.036	0.306	12.828	.000
Edu4	(Constant)	2.263	0.629		3.599	.000
	LNTOTEXP	0.419	0.068	0.302	6.117	.000
a. Dependent variable: LNTOBTOT						

Source: CAPMAS Household Budget Survey 1999–2000

Table A3.6. Expenditure elasticity of tobacco from household budget by work status, 1999–2000

Coefficient (a)						
		Unstandardized coefficients		Standardized coefficients	*t*	Sig.
Model		*B*	Std. error	Beta		
Total						
Work1	(Constant)	1.257	0.102		12.331	.000
	LNTOTEXP	0.538	0.011	0.402	48.087	.000
Work2						
	(Constant)	6.054E–02	0.138		0.439	0.661
	LNTOTEXP	0.664	0.015	0.500	44.371	.000
Work3						
	(Constant)	1.042	0.228		4.568	.000
	LNTOTEXP	0.568	0.025	0.393	22.498	.000
Work4						
	(Constant)	7.483	3.674		2.037	0.069
	LNTOTEXP	–0.175	0.411	–0.134	–0.427	0.679
Urban						
Work1	(Constant)	1.493	0.126		11.809	.000
	LNTOTEXP	0.518	0.014	0.407	37.845	.000
Work2						
	(Constant)	0.627	0.200		3.130	0.002
	LNTOTEXP	0.614	0.021	0.523	29.239	.000
Work3						
	(Constant)	1.235	0.299		4.132	.000
	LNTOTEXP	0.550	0.033	0.385	16.797	.000
Work4						
	(Constant)	32.137	26.906		1.194	0.444
	LNTOTEXP	–2.845	2.927	–0.697	–0.972	0.509
Rural						
Work1	(Constant)	1.953	0.199		9.818	.000
	LNTOTEXP	0.452	0.022	0.281	20.256	.000
Work2						
	(Constant)	0.702	0.237		2.959	0.003
	LNTOTEXP	0.587	0.026	0.347	22.270	.000
Work3						
	(Constant)	1.155	0.369		3.127	0.002
	LNTOTEXP	0.550	0.041	0.366	13.289	.000
Work4						
	(Constant)	7.134	3.751		1.902	0.099
	LNTOTEXP	–0.140	0.423	–0.124	–0.332	0.750
a. Dependent variable: LNTOBTOT						

Source: CAPMAS Household Budget Survey 1999–2000

Table A3.7. Price elasticity of tobacco from household budget, 1995–96

Coefficient (a)						
		Unstandardized coefficients		**Standardized coefficients**	***t***	**Sig.**
		B	**Std. error**	**Beta**		
Total						
1	(Constant)	5.987	0.028		211.738	0.000
	LNPRICE	–0.298	0.015	–0.505	–20.077	0.000
2						
	(Constant)	6.229	0.019		333.332	0.000
	LNPRICE	–0.332	0.012	–0.545	–28.879	0.000
3						
	(Constant)	6.407	0.017		367.284	0.000
	LNPRICE	–0.354	0.012	–0.524	–28.894	0.000
4						
	(Constant)	6.594	0.019		340.522	0.000
	LNPRICE	–0.352	0.017	–0414	–21.270	0.000
Urban						
1u	(Constant)	6.081	0.040		151.577	0.000
	LNPRICE	–0.296	0.027	–0.437	–11.024	0.000
2u						
	(Constant)	6.310	0.029		214.753	0.000
	LNPRICE	–0.327	0.026	–0.403	–12.820	0.000
3u						
	(Constant)	6.454	0.029		223.507	0.000
	LNPRICE	–0.314	0.026	–0.370	–11.947	0.000
4u						
	(Constant)	6.606	0.033		200.576	0.000
	LNPRICE	–0.256	0.035	–0.241	–7.398	0.000
Rural						
1R	(Constant)	5.915	0.040		146.275	0.000
	LNPRICE	–0.285	0.020	–0.498	–14.428	0.000
2R						
	(Constant)	6.162	0.026		238.327	0.000
	LNPRICE	–0.349	0.014	–0.571	–24.659	0.000
3R						
	(Constant)	6.332	0.023		275.263	0.000
	LNPRICE	–0.349	0.014	–0.571	–24.659	0.000
4R						
	(Constant)	6.537	0.024		276.687	0.000
	LNPRICE	–0.375	0.016	–0.523	–22.811	0.000
a. Dependent variable: LNTOBTOT						

Source: CAPMAS Household Budget Survey 1995–96

Table A3.8. Price elasticity of tobacco from household budget by educational status, 1995–96

Coefficient (a)						
		Unstandardized coefficients		**Standardized coefficients**	**t**	**Sig.**
		B	**Std. error**	**Beta**		
Total						
Ed1	(Constant)	6.405	0.013		500.356	0.000
	LNPRICE	–0.383	0.008	–0.560	–49.034	0.000
2Ed						
	(Constant)	6.284	0.037		171.517	0.000
	LNPRICE	–0.308	0.028	–0.408	–10.904	0.000
3Ed						
	(Constant)	6.327	0.026		246.775	0.000
	LNPRICE	–0.308	0.023	–0.371	–13.658	0.000
4Ed						
	(Constant)	6.379	0.044		144.533	0.000
	LNPRICE	–0.268	0.052	–0.220	–5.194	0.000
Urban						
Edu1	(Constant)	6.479	0.022		293.901	0.000
	LNPRICE	–0.365	0.017	–0.446	–20.915	0.000
Edu2						
	(Constant)	6.354	0.052		122.716	0.000
	LNPRICE	–0.333	0.046	–0.370	–7.302	0.000
Edu3						
	(Constant)	6.332	0.037		169.440	0.000
	LNPRICE	–0.270	0.037	–0.275	–7.284	0.000
Edu4						
	(Constant)	6.408	0.059		108.604	0.000
	LNPRICE	–0.252	0.075	–0.167	–3.379	0.000
Rural						
Edu1	(Constant)	6.342	0.016		397.454	0.000
	LNPRICE	–0.372	0.009	–0.579	–41.899	0.000
Edu2						
	(Constant)	6.183	0.053		117.484	0.000
	LNPRICE	–0.273	0.035	–0.435	–7.717	0.000
Edu3						
	(Constant)	6.298	0.036		175.467	0.000
	LNPRICE	–0.323	0.028	–0.448	–11.469	0.000
Edu4						
	(Constant)	6.237	0.068		92.350	0.000
	LNPRICE	–0.244	0.065	–0.312	–3.734	0.000
a. Dependent variable: LNTOBTOT						

Source: CAPMAS Household Budget Survey 1995–96

Table A3.9. Price elasticity of tobacco from household budget by work status, 1995–96

Coefficient (a)						
Model		Unstandardized coefficients		Standardized coefficients	*t*	Sig.
		B	Std. error	Beta		
Total						
Work1	(Constant)	6.320	0.014		438.927	0.000
	LNPRICE	–0.349	0.010	–0.499	–34.337	0.000
Work 2						
	(Constant)	6.489	0.021		310.830	0.000
	LNPRICE	–0.377	0.012	–0.578	–30.417	0.000
Work 3						
	(Constant)	6.379	0.026		242.956	0.000
	LNPRICE	–0.385	0.016	–0.585	–23.325	0.000
Work 4						
	(Constant)	7.331	0.321		22.850	0.000
	LNPRICE	–0.817	0.169	–0.892	–4.843	0.000
Urban						
Work1	(Constant)	6.366	0.022		285.649	0.000
	LNPRICE	–0.322	0.020	–0.369	–15.783	0.000
Work2						
	(Constant)	6.597	0.039		170.556	0.000
	LNPRICE	–0.319	0.030	–0.436	–10.670	0.000
Work 3						
	(Constant)	6.379	0.026		242.956	0.000
	LNPRICE	–0.385	0.016	–0.585	–23.325	0.000
Work 4						
	(Constant)	7.312	0.441		16.588	0.000
	LNPRICE	–1.015	0.244	–0.972	–4.158	0.000
Rural						
Work2	(Constant)	6.250	0.020		317.817	0.000
	LNPRICE	–0.338	0.012	–0.535	–28.036	0.000
Work2						
	(Constant)	6.417	0.025		260.634	0.000
	LNPRICE	–0.369	0.04	–0.591	–26.990	0.000
Work3						
	(Constant)	6.299	0.035		180.456	0.000
	LNPRICE	–0.373	0.020	–0.604	–19.015	0.000
Work4						
	(Constant)	7.372	0.419		17.577	0.000
	LNPRICE	–0.729	0.214	–0.891	–3.399	0.000
a. Dependent variable: LNTOBTOT						

Source: CAPMAS Household Budget Survey 1995–96

Table A3.10. **Price elasticity of tobacco from household budget 1999/2000 by expenditure quintile**

Coefficient(a)						
Model		**Unstandardized coefficients**		**Unstandardized COEFFICIENTS**	***t***	**Sig T**
Total		***B***	**S E B**	**Beta**		
1	constant	6.294110	0.013863		454.021	.0000
	LNPRICE	–0.363949	0.007926	–0.573015	–45.918	.0000
2	constant	6.477410	0.010763		601.795	.0000
	LNPRICE	–0.390205	0.006893	–0.582913	–56.611	.0000
3	constant	6.646843	0.010650		624.094	.0000
	LNPRICE	–0.408355	0.007682	–0.540318	–53.156	.0000
4	constant	7.040093	0.013625		516.704	.0000
	LNPRICE	–0.489666	0.011894	–0.449622	–41.169	.0000
Urban						
1u	constant	6.372292	0.017906		355.866	.0000
	LNPRICE	–0.391725	0.012148	–0.538657	–32.247	.0000
2u	constant	6.582074	0.015187		433.412	.0000
	LNPRICE	–0.421471	0.011848	–0.511557	–35.572	.0000
3u	constant	6.735941	0.015396		437.511	.0000
	LNPRICE	–0.423416	0.013292	–0.45998	–31.855	.0000
4u	constant	7.132831	0.021148		337.287	.0000
	LNPRICE	–0.467404	0.021116	–0.340860	–22.135	.0000
Rural						
1R	constant	6.294110	0.13863		454.021	.0000
	LNPRICE	–0.346931	0.007926	–0.573015	–45.918	.0000
2R	constant		0.10763		601.795	.0000
	LNPRICE	–0.366055	0.006893	–0.582913	–56.611	.0000
3R	constant		0.10650		624.094	.0000
	LNPRICE	–0.379725	0.007682	–0.540318	–53.156	.0000
4R	constant		0.013625		516.704	.0000
	LNPRICE	–0.467159	0.011894	0.449622	–41.169	.0000
a. Dependent Variable :LNTOBTOT						

Source: CAPMAS Household Budget Survey 1999–2000

Table A3.11. **Price elasticity of tobacco from household budget 1995–96 by educational status**

Coefficient (a)						
		Unstandardized coefficients		**Standardized coefficients**	***t***	**Sig T**
Total		***B***	**SE B**	**Beta**		
1Ed	constant	6.657	0.008		819.985	0
	LNPRICE	–0.442	0.005	–0.529	–87.709	0
2Ed	Constant	6.669	0.02		332.836	0
	LNPRICE	–0.443	0.015	–0.506	–28.186	0
3Ed	Constant	6.614	0.014		471.547	0
	LNPRICE	–0.410	0.012	–0.450	–35.121	0
4Ed	constant	6.899	0.028		249.067	0
	LNPRICE	–0.441	0.029	–0.283	–15.248	0
Urban						
1Ed	constant	6.742	0.013		538.111	0
	LNPRICE	–0.468	0.009	–0.533	–50.973	0
2Ed	constant	6.743	0.026		255.997	0
	LNPRICE	–0.450	0.022	–0.459	–20.492	0
3Ed	constant	6.674	0.018		367.6	0
	LNPRICE	–0.419	0.016	–0.410	–25.691	0
4ED	Constant	6.927	0.034		202.301	0
	lLNPRICE	0.409	0.039	–0.216	–10.604	0
Rural						
1Ed	constant	6.566	0.011		609.445	0
	LNPRICE	–0.413	0.006	–0.617	–68.780	0
2Ed	constant	6.484	0.029		224.668	0
	LNPRICE	–0.0.382	0.019	–0.590	–19.82	0
3Ed	constant	6.467	0.022		294.447	0
	LNPRICE	–0.373	0.016	–0.503	–23.23	0
4Ed	Constant	6.478	0.047		137.440	0
	LNPrice	0.356	0.036	–0.456	–9.889	0
a. Dependent Variable :LNTOBTOT						

Source: CAPMAS Household Budget Survey 1999–2000

Table A3.12. Price elasticity of tobacco from household budget 1999–2000 by work status

Coeffi cient (a)						
Model		**Unstandardized Coefficients**		**Standardized coefficients**	**T**	**Sig T**
Total		**B**	**SE B**	**Beta**		
1 Work	constant	6.627634	0.008704		761.429	.0000
	LNPRICE	–0.438978	0.006399	–.530854	–68.596	.0000
2 Work	constant	6.809945	0.013391		508.539	.0000
	LNPRICE	–0.473072	0.007915	–.614318	–59.771	.0000
3 Work	constant	6.669846	0.017942		371.750	.0000
	LNPRICE	–0.437011	0.012405	–.556658	–35.228	.0000
4 Work	constant	6.276039	0.171458		36.604	.0000
	LNPRICE	–0.273406	0.103051	–.642739	–2.653	.0000
Urban						
1 Work ur	constant	6.714579	0.012133		553.395	.0000
	LNPRICE	–0.465052	0.010280	–.470217	–45.240	.0000
2 Work ur	constant	7.011959	0.022982		305.110	.0000
	LNPRICE	–0.506317	0.017.31	–.529214	–29.730	.0000
3 Work ur	constant	6.705254	0.024329		275.602	.0000
	LNPRICE	–0.427195	0.018108	–.505792	–23.592	.0000
4 Work ur	constant	6.759306	0.041977		161.023	.0040
	LNPRICE	–0.509152	0.022398	–.999034	–22.732	0.280
Rural						
1 Work ru	constant	6.470624	0.012572		514.671	.0000
	LNPRICE	–0.388915	0.007886	–.580941	–49.315	.0000
2 Work ru	constant	6.625951	0.016042		413.038	.0000
	LNPRICE	–0.421168	0.008554	–.633381	–49.239	.0000
3 Work ru	constant	6.600825	0.026240		249.839	.0000
	LNPRICE	–0.433808	0.016718	–.608866	–25.949	.0000
4Work ru	constant	6.121762	0.202671		30.205	.0000
	LNPRICE	–0.183929	0.127662	–.478240	–1.441	0.1928
a. Dependent Variable :LNTOBTOT						

Source: CAPMAS Household Budget Survey 1999–2000

PART FIVE: Results of the interviews with University Students.

Table A5.1 Smoking frequency

How many days did you smoke in the previous month?	Sex		Group total
	Male	Female	
	%	%	%
1	1.7	20.0	3.2
3	1.7	20.0	3.2
6	1.7		1.6
9	1.7	40.0	4.8
10	1.7		1.6
15	1.7		1.6
17	1.7		1.6
20	10.3		9.5
25	8.6		7.9
30	62.1	20.0	58.7
31	6.9		6.3
Group total	100.0	100.0	100.0

Table A5.2. Cigarettes per day

How many cigarettes do you smoke per day?	Sex		Group total
	Male	Female	
	%	%	%
1	4.9	25.0	6.2
2	3.3		3.1
3	6.6	25.0	7.7
4	4.9		4.6
5	4.9		4.6
6	3.3		3.1
7	4.9		4.6
9	1.6	25.0	3.1
10	8.2	25.0	9.2
11	1.6		1.5
13	1.6		1.5
15	6.6		6.2
17	1.6		1.5
18	3.3		3.1
20	29.5		27.7
22	3.3		3.1
25	1.6		1.5
30	4.9		4.6
35	1.6		1.5
40	1.6		1.5
Group total	100.0	100.0	100.0

Table A5.3. Cigarettes per month

Amount of consumption on cigarettes in month	Sex		Group total
	Male	Female	
	%	%	%
Don't spend	3.3		2.9
10.00	3.3		2.9
15.00	3.3		2.9
20.00		25.0%	2.9
21.00	3.3		2.9
24.00	3.3		2.9
27.00	3.3		2.9
30.00	6.7		5.9
36.00	3.3		2.9
40.00	16.7		14.7
45.00		25.0	2.9
50.00	6.7		5.9
56.00	3.3		2.9
60.00	10.0		8.8
77.00	3.3		2.9
80.00		25.0	2.9
90.00	6.7		5.9
100.00	6.7		5.
120.00	13.3	25.0	14.7
250.00	3.3		2.9
Group total	100.0	100.0	100.0

Table A5.4. Price per packet of cigarettes

Price of cigarette package?	Sex		Group total
	Male	Female	
	%	%	%
0.00	1.7		1.6
1.00	1.7		1.6
1.50	1.7		1.6
1.60	15.3	25.0	15.9
1.70	1.7		1.6
1.75	3.4		3.2
1.80	3.4		3.2
2.00	11.9		11.1
2.50	3.4		3.2
2.70	1.7		1.6
3.25	1.7		1.6
4.25	6.8		6.3
4.50	42.4	75.0	44.4
5.00	3.4		3.2
Group total	100.0	100.0	100.0

PART SIX: Tobacco Control in Egypt and Policy Recommendations

Table A6.1. Tobacco control sheet

Key areas	ACTION	VERIFICATION ELEMENTS	KEY DELIVERABLES	RESPONSIBLE COMONENT
1. Establish "Smoking Control Office" infrastructure	1.1 Establish a vital "Smoking Control Office"	1.1.1. Revitalize the activities of the steering committee for the "National Programme for Smoking Control" 1.1.2. Establish & staff the "Smoking Control Office" featuring adequate structure, activities, policies, procedures, plans, reports & partnerships.	* Comm ittee meetings agendas & minutes * Vital "Smoking Control Office"	"Smoking Control Office" Director
2. Develop Epidemiology & Surveillance System	2.1. Develop a research-based surveillance & survey system	2.1.1. Set a protocol for a national survey that would be comprehensive in assessing prevalence data. And would be considerate of the Global Youth Survey.	* National survey results	Epidemiology & surveillance department
		2.1.2. Design and initiate an Egypt-specific surveillance protocol with relevant data collection, data analysis and response mechanisms.	* An approved surveillance system * Surveillance reports	
	2.2. Develop the role of the Central MOHP Laboratory regarding "smoking control"	2.2.1. Upgrade and enhance the laboratory role in Tobacco control enforcement policy after reviewing CDC standards of testing, and training the necessary personnel on new methods.	* Upgrade equipment and standards of testing * Trained staff * Laboratory reports	
		2.2.2. Upgrade and enhance the laboratory role in monitoring nicotine levels in blood during management of smokers.		
3. Monitor & support legislation, regulation & enforcement 4. Develop MOHP Control Health Education & Communication Programs	3.1. Enforcement of existing laws	3.1.1. Support the enforcement of the existing laws through collaboration with lead agencies & advocacy	* A vital committee with clear roles of lead agencies & MOHP * Media & HE messages	Policy enforcement department Health communication & education department

	3.2. Monitor new regulations on tobacco prices, taxes and tobacco sales to youth	3.2.1. Monitor the results of the new "health insurance" law i.e. items related to tobacco taxes and support rapid policy interpretation into action once the law is approved.	* Approved tobacco taxes and regulations * Media & HE messages	
		3.2.2. Monitor the results of the draft law submitted to parliament regulating tobacco sales to youth & support policy interpretation into action once the law is approved.	* Approved law regulating tobacco sales to youth * Media & HE messages	
	4.1 Set Primary Prevention health education programs	4.1.1 Create and disseminate/ implement specific and comprehensive HE strategies, activities and campaigns that address all the target groups and get the maximum commitments from all the partners for advocacy.	* Educational materials (print, visual…etc) * Health education reports from leads in governorates	
	4.2 Promote create and apply smoking cessation methodologies	4.2.1 Integrate smoking cessation counselling & treatment services into all MOHP facilities	* Smoking cessation services integrated in MOHP facilities	
		4.2.2. Create, market and assure the viability of comprehensive smoking cessation clinics.	* Smoking-cessation clinics	
		4.2.3 Launch a programme on "Smoking-free" institutions	* Smoking-free institutions	
	4.3. Using the mass media as the means of message reinforcement	4.3.1. Create & implement targeted TV ads strategies, messages and campaigns (prime time airing) aiming at prevention, treatment, protection, de normalizing smokers and counter-marketing Tobacco companies efforts.	* Media plans * Media analysis reports	
	4.4. Increase smoking control awareness by youth	4.4.1. Ensure smoking control messages reach youth through national & local sports events.	* Sports events plans/schedules * Communication tools & reports	

Table A6.2. Target diseases

Deaths caused by the following per 100 000	baseline	target
Coronary heart disease		
Lung cancer		
Chronic obstructive pulmonary disease		
Bladder cancer		
Stroke		

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

Table No. A6.3.
Increase in Prices of Local Cigarettes in Selected Countries, from 1991 to 1995

Country	Price/1991	Price/1995	[illegible]	% increase
Australia	9.09	12.68	3.59	39.49
Belgium	8.16	11.08	2.92	35.78
Brazil	2.03	3.19	1.16	57.14
Denmark	14.35	17.61	3.26	22.72
Egypt, foreign brand	3.02	3.9	0.88	29.14
Egypt, local brand	?	?	?	?
France	6.71	11.25	4.54	67.66
Germany	9.01	11.8	2.79	30.97
Greece	3.09	7.34	4.25	137.54
Guatemala	2.03	2.52	0.49	24.14
Hong Kong	7.25	10	2.75	37.93
Hungary	2.88	3.23	0.35	12.15
Italy	6.02	8.47	2.45	40.70
Japan	5.53	8.16	2.63	47.56
Malaysia	3.22	4.42	1.2	37.27
México	1.7	2.79	1.09	64.12
Netherlands	6.39	9.93	3.54	55.40
Norway	19.82	22.54	2.72	13.72
Poland	1.97	2.34	0.37	18.78
Singapore	6.78	11.53	4.75	70.06
South Africa	2.65	3.3	0.65	24.53
Spain	4.41	5.3	0.89	20.18
Sweden	7.42	7.75	0.33	4.45
Switzerland	7.58	10.37	2.79	36.81
United Kingdom	12.68	14.59	1.91	15.06
USA	6.09	6.8	0.71	11.66
Venezuela	2.35	2.69	0.34	14.47

Source:

Table A6.4. Foreign trade

Foreign Trade		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EXPORTS	Fuel	2013.3	6325.5	4411.3	5178.7	4516.7	4303.8	5684.9	5837.7	3147.5	4371.9
	Cotton	562.2	193.4	175.2	146.7	791.1	517.3	311.9	374.7	537.8	816.1
	Raw materials	523.8	650.1	779.2	703.5	550.0	837.8	744.2	647.7	626.5	580.5
	Semi–manufact goods	1261.8	1289.5	1263.2	1086.8	1809.4	2067.5	1753.9	2056.0	1778.9	1422.4
	Finished Goods	2574.7	3306.2	3542.3	3348.8	4090.3	3977.4	3509.2	4167.5	4292.6	4108.8
	Others	–	–	–	–	–	–	–	–	302.5	561.5
Total exports		6953.8	11764.7	10171.2	10464.5	11757.5	11703.8	12004.1	13083.8	10685.8	11931.2
Imports											
	Fuel	564.8	462.1	311.5	399.2	373.4	371.6	507.6	725.9	2562.9	1733.5
	Raw materials	3511.5	3293.6	4098.7	3001.2	4605.7	5618.5	7616.4	5790.9	5871.1	7399.0
	Intermediate goods	10041.5	10790.1	11217.9	11265.7	12792.5	17551.1	18529.6	19115.8	21029.8	24256.1
	Investment goods	5300.7	5524.7	6502.8	7238.6	8256.2	8928.3	10124.8	11324.5	13572.0	9551.0
	Consumption goods	5404.7	5145.8	5525.2	5645.8	6432.8	7421.5	7439.5	7928.6	9317.8	8983.5
	Others	–	–	–	–	–	–	–	–	3672.3	2478.2
Total imports		24823.2	25216.3	27656.1	27550.4	32460.6	39890.9	44217.9	44885.8	56025.9	54399.3
Trade balance		–17869.4	–13451.6	–17484.9	–17085.9	–20703.1	–28187.1	–32213.8	–31802.0	–45340.1	–42468.1

Source: Economic Bulletin, National Bank of Egypt, 2000

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