Tobacco Industry in Armenia:
Evaluating the Impact of Tobacco Control Policies on Employment

Research Paper
Prepared by ICHD experts for the Tobacco Free Initiative - World Health Organization

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Contents

Introduction

After the collapse of the Soviet Union, Armenia predetermined new directions and targets for its political and socio-economic development. The new principles of economic regulation were adopted from the western – type economic policy. The obstacles on the way of creation of completely new economic system on one hand, the devastating earthquake in 1988 and interregional conflict with the neighboring Azerbaijan on the other caused drastic decline in economy, thus cutting down the employment and making the creation of additional workplaces a top priority for the policy making.

Under the highlight of the recent positive changes in investment climate and economy at whole, the activation in tobacco industry was perceived by the policy makers and the population as an important step towards economic stabilization and a possibility for a boost in employment. This is why the Tobacco Control policy has never been interpreted as is; it has always bean considered as a measure to ease smoking impact on health but never under the highlight of its economic consequences.

Armenia is amongst the countries where the tobacco use has reached enormous proportions. According to the researches held by National Tobacco Program of the Ministry of Health, every second adult Armenian citizen, regardless of the sex, is a smoker. 30 percent of teenagers and approximately 35 percent of women smoke[1]. The number of children exposed to the environmental tobacco smoke is out of control.

On the other hand, as mentioned above, the tobacco industry has stepped into a stage of rapid development. More and more workplaces are being opened in Armenia, thus making the social impact of tobacco industry more influential on society and economy.

Under these circumstances the necessity to perform appropriate actions targeted to health care improvement and the assessment of possible impact of the mentioned actions on the economy are to be carefully determined.

The health impact of tobacco use is thoroughly investigated and the negative influence of tobacco on the human organism is confirmed once and for all. The fact that cigarette smoking is damaging human health on a global scale is not a matter for dispute. Smoking-related diseases are already responsible for 1 in 10 adult deaths worldwide. By 2030, perhaps sooner, the ratio will be 1 in 6, or 10 million deaths a year, making smoking the largest single cause of death. Until recently, this epidemic of chronic disease and premature death affected mainly the populations of rich countries, but it is rapidly shifting to the developing world. By 2020, 7 of every 10 people who die from smoking-related diseases will be from low- and middle-income countries[2].

Tobacco Production

The history of tobacco cultivation in Armenia begins from XVII century. The Armenian cigarette production, which was 90% of the local market in 80-s was almost completely ruined after the collapse of the USSR. All four branches: tobacco farming, leaf marketing and processing, cigarette manufacturing and cigarette wholesaling and retailing were more or less affected by the economic crises.

Tobacco Farming

Agronomic and food system takes central place in the economy of the Republic and will keep this role in future, as well. The proportion of agriculture in GDP is about 30%. There are over one million people living in villages, and about 65% of food demand has been satisfied due to the domestic production.

The productivity in agriculture is not satisfactory: the efficiency of the water use is very low in irrigation system; machinery is mainly depreciated and out of date.

In addition the farmland territory is restricted by the natural conditions of Armenian highland.

Total territory of Armenia is equal to about 2,980,000 hectares. The total area planted constitutes about 10 per cent of the total area. During the previous 15 years it was reduced by about 30 per cent.

Figure 1 illustrates the changes of the total planted territory size from year 1985 to 2000.

Figure 1. Total area planted in Armenia[3]

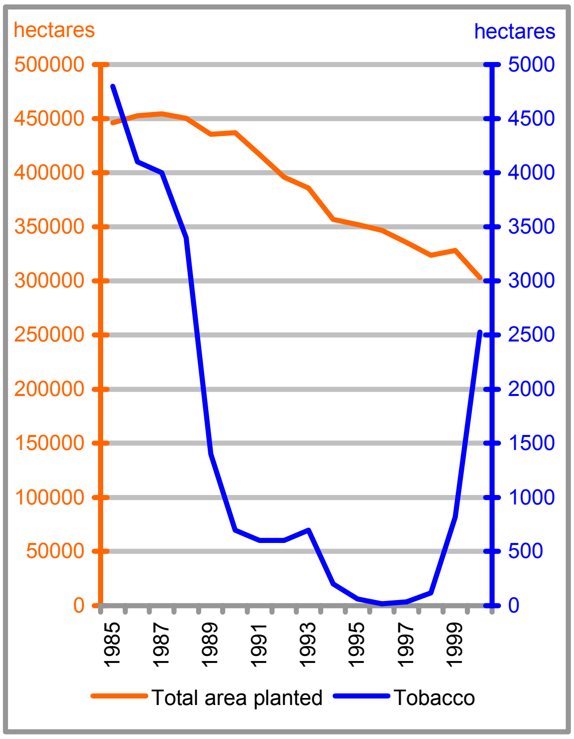


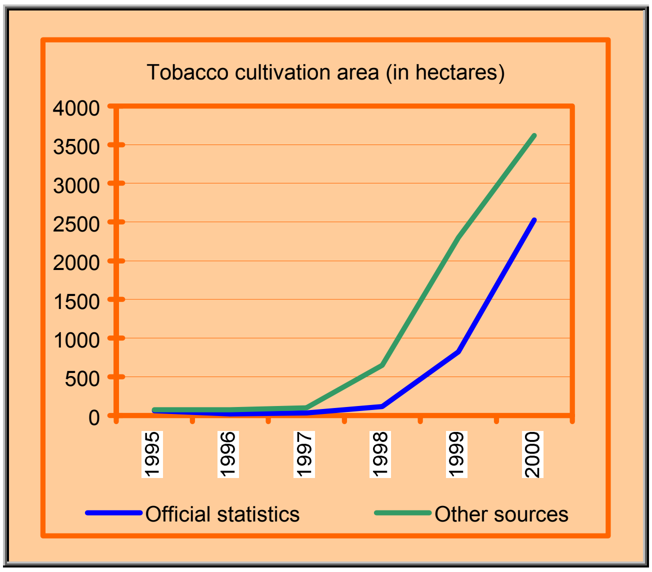
Table 1. The share of tobacco in total area planted (1985-2001)

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

The recent increase of the tobacco cultivation area can be interpreted as a consequence of serious investments in tobacco industry which is partly based on the locally produced tobacco.

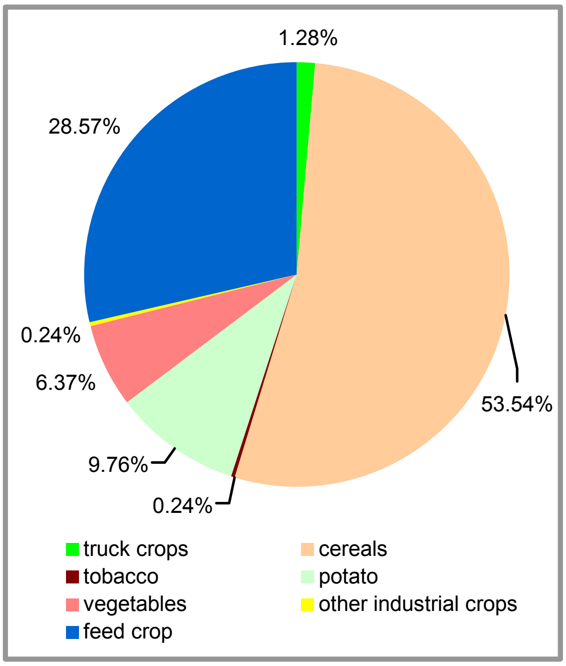
Undergoing considerable changes in total economic structure, the system of national statistics was not always evenly able to adjust to the new environment. Besides, a great portion of economic activities, particularly in early 90's, become untraceable.

As the result, official data on different economic or other activities are not always reflecting the real situation in the concrete sphere. For example, the official data for the tobacco cultivation area noticeably differ from estimations carried out by a company engaged in the tobacco production and having held its own analysis and observations of the sector.



It's worth mentioning that tobacco occupies the last row in the structure of total area planted.

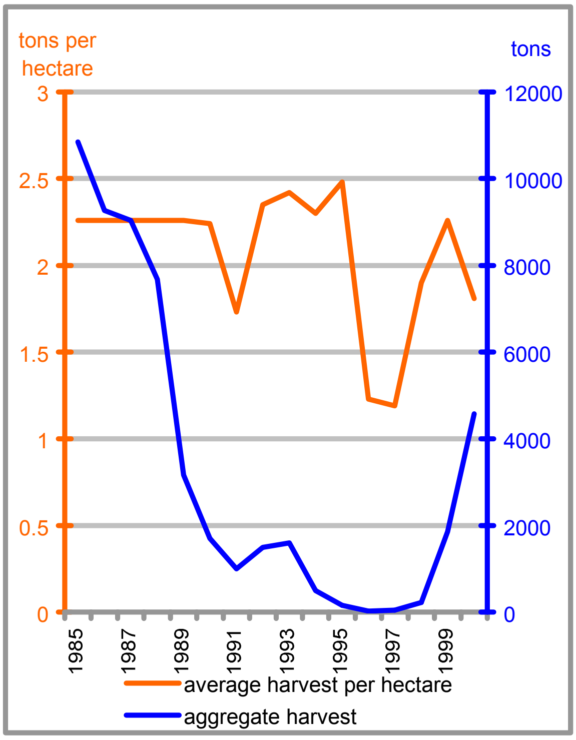
Figure 2. Cultivation area structure[4]



Similar to the cultivation area the aggregate tobacco harvest had the same dynamics: more in 80's, less in early 90's and, during recent years, obtaining a good trend of growth.

As shown later, the local tobacco harvest is basically used for domestic production and only a small proportion of the product (about 7 per cent) is being exported.

Figure 3. Aggregate tobacco harvest and average productivity[5]



Considering the given level of mechanization in tobacco industry and the above mentioned limitations in the agriculture, it is common for the local tobacco industry, that in average 8-10 persons are cultivating 1 hectare of land[6]. As there are no statistical data for the labor force engaged in tobacco farming, the latter may be calculated by multiplying the total area planted with tobacco with the mentioned figure. Also, as in Armenia the labor force engaged in the tobacco farming consists exclusively of the households and using the estimations, that in average 3 person in the farming are joint in one household, we can assume, that the number of households is equal to the number of labor force, divided by 3.

Table 2. The estimated number of labor force and households engaged in tobacco farming

	1995	1996	1997	1998	1999	2000
Labor force	558	171	315	1053	7380	22752
Households	186	57	105	351	2460	7584

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

It is more complicated to estimate total household income in tobacco farming, as there is no official statistics presenting the relevant information. Nevertheless the situation is less complicated for the recent period, as from the year 2000 only one private company in Armenia is engaged in purchasing the output of tobacco farming from the households. The aggregate volumes of the contracts between the latter and the households are shown below.

Table 3. Aggregate income of households in tobacco farming

	2000	2001[7]
Aggregate income of households in US dollars	6473000	8000000

Thus an average household gained about 850 US dollars from tobacco cultivation in 2000. It should be noted that Gross Domestic Prodact per capita for the same year was 503 US dollars[8].

Summarizing, we can state, that moderate resources are currently being used in the sector. The sector does not have a significant share in the agriculture. Yet it is growing with a good pace and is expected to maintain this trend in the future.

Leaf Marketing and Processing

The statistical situation in tobacco leaf marketing and processing is less complicated, as the sector is completely new for the Armenian economy and, again, a single company is active in this sector. All the data concerning the mentioned sector before the year 2000 were aggregated in statistics for cigarette manufacturing. In 2000 only 800 persons were engaged in leaf marketing and processing and their total number is expected to remain the same for the year 2001.

Cigarette Manufacturing

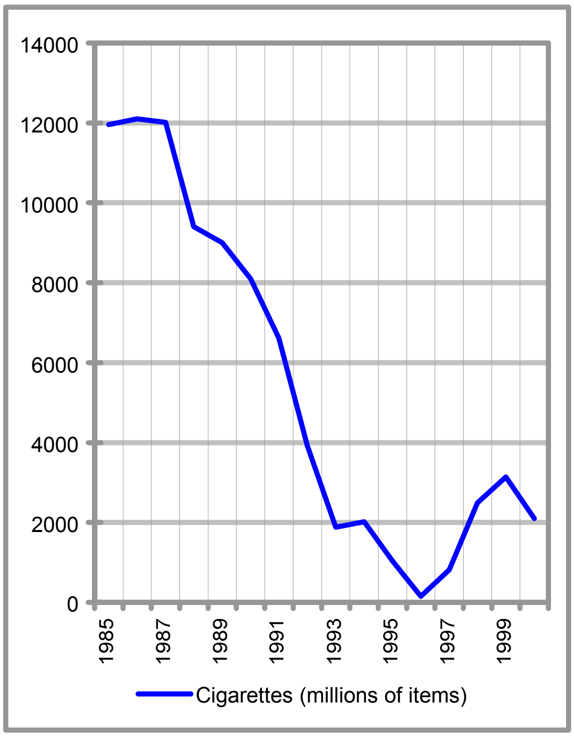
The dynamics of cigarette manufacturing in Armenia reflects the structural changes in the sector started from early 90s. Firstly, the collapse of the economy and the breakdown of economic links with former trade partners caused a significant drop down of the production volumes. Besides, the trade liberalization opened the domestic market for the international, well known brands, which were in deficit during the soviet period. In these circumstances the local tobacco products became unable to compete with superior brands and were crowded out from the market.

The further growth of tobacco industry was intensive and the employment in the sector currently remains in non-significant level.

Table 4. Employment in cigarette manufacturing (persons)[9]

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

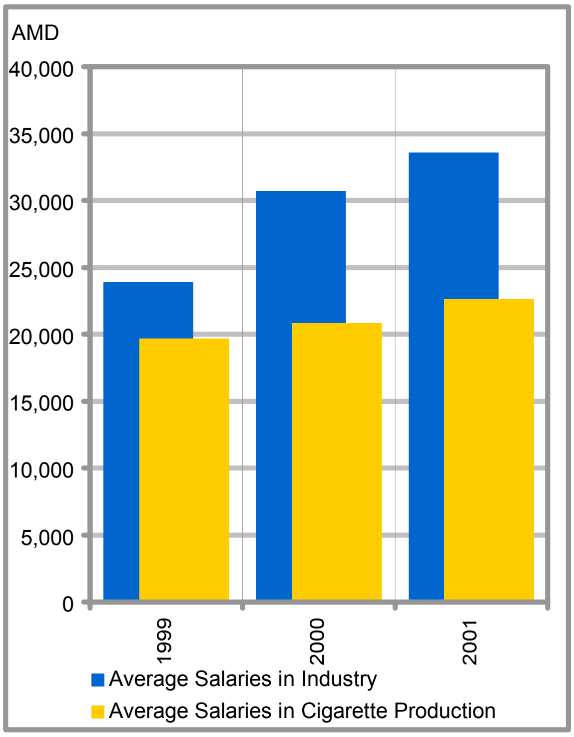
Figure 4. Cigarette manufacturing[10]



As shown in the Table 4 the total number of employees is rather small and does not even comprise noticeable segment in the total employment. As for the year 2000 the share of tobacco industry employment constituted 0.067% of the total employment (unemployment in the economy was 11.7%[11] in 2000 which is 169500 persons).

The labor force in cigarette manufacturing is normally on the same qualification level as in similar industries. Meanwhile the workers in the sector are being paid less than in other branches of industry in average (see Figure 5). It should be stated, that the wages of administrative staff are excluded.

Figure 5. Salaries in the Industry and in cigarette manufacturing sector[12]



Cigarette Wholesaling and Retailing

Information about cigarette wholesaling and retailing in Armenia is not always available. Currently there are 7 major wholesalers in the market, 5 of them importers. The remaining 2 are the local producers who sell their products by their own network. The labor force engaged in cigarette wholesaling of the local producers is considered in total employment in cigarette manufacturing. The labor force used for the wholesaling of the imported product is not publicized in the statistical sources. However, it is possible to estimate the employment in the sector making several assumptions and approximations.

To assess the production volume in the market, an assumption, that there is no change in stock of cigarette in yearly basis, is to be done. Not counting the change in stock of the product, the local market sales should be equal to overall production minus exports plus imports of the product.

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

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

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

The further estimation will be based on the average product volumes distributed by an employee in wholesale trade. Having in mind, that one of Armenian local companies, which, according to British American Tobacco Company, owns about 0.7% share of the local market, has 7 employees engaged in cigarette wholesaling (tobacco wholesaling market is not yet organized; a single producer purchases tobacco directly from the farmers and utilize it in its production process). From the Table 5 we have the local market size. To estimate the employment for the year 2000 we have to calculate the 0.7% of the total product volume. 0.7% of 3,154,000,000 items is equal to nearly 22,000,000. Thus 7 employees sell in the wholesale market 22 millions of items of cigarettes, which is 3.15 millions per one employee. Extrapolating the figure to the overall market we can estimate the labor force there. It is 3,154,000,000 divided by 3,150,000. The approximated result is nearly 1000 employee, for the year 2000.

Assuming, that the sales volume per employee had been stabile for the researched period, we will have the dynamics of wholesale employment.

Table 6. Estimated employment in wholesale trade

1995	1996	1997	1998	1999	2000
591	403	667	1772	1308	1000

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

Table 7. Estimation of the employment in the cigarette retail trade turnover[13]

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

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

Table 8. Employment in cigarette wholesale and retail trade

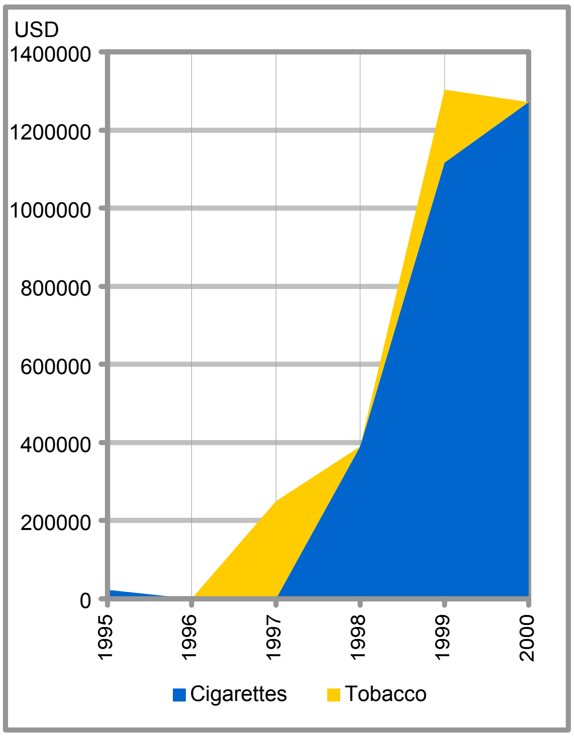
	1995	1996	1997	1998	1999	2000
Retail	600	331	347	453	505	661
Wholesale	591	403	667	1772	1308	1000
Total	**3186**	**2730**	**3011**	**4223**	**3812**	**3661**

Tobacco Trade

Tobacco trade dynamics clearly reflects the situation in the local market: the crisis in industry and the following growth in cigarette production and improvement of marketing.

The imports of cigarettes rose in parallel with economy stabilization as the solvent demand for cigarettes increased. After the local industries started cigarette production, the imports was partly substituted by the local brands. Meanwhile the exports of the local production rose. The mentioned trends are clearly observable on the figures below.

Figure 6. Revenues from exports (summative)[14]



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

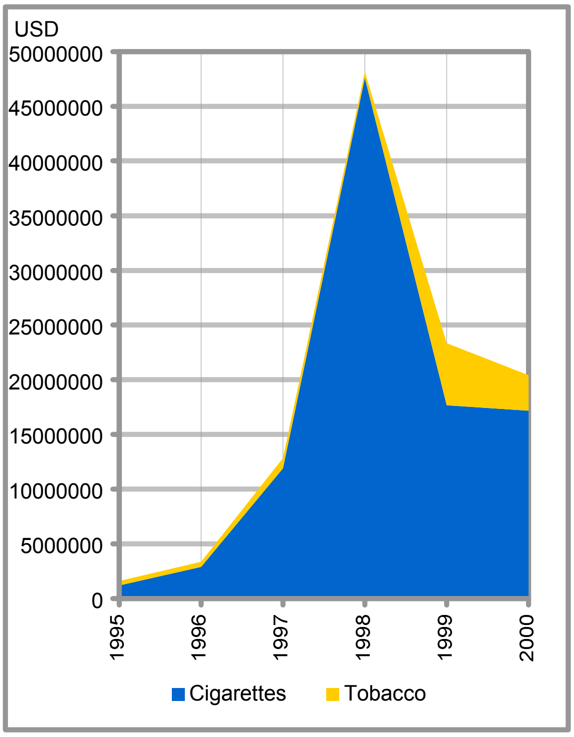
Table 9. The quantitative dynamics of cigarette trade (thousands of items)

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

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

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

Figure 7. Expenses on imports (summative)[15]



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

Table 11. Tobacco products trade partners (cumulative volumes of trade from 1998, in US dollars)[16]

Total Exports		Total Imports	
Russia	1,936,871	Panama	35,194,478
USA	681,063	Turkey	29,462,035
Georgia	378,959	Germany	7,606,341
Ukraine	248,700	Bulgaria	5,919,070
Belgium	215,645	Belgium	4,955,404
Iran	210,750	Virgin Islands	3,978,930
Hong Kong	210,375	Ukraine	3,812,194
Turkmenistan	209,319	UK	3,477,028
UK	58,650	Cyprus	2,558,490
Hungary	47,880	UAE	2,195,034
Byelorussia	33,000	Switzerland	1,408,771
Lichtenstein	26,594	Greece	1,051,792
Latvia	11,600	Georgia	937,032
Canada	2,167	India	678,645
Kyrgyzstan	1,548	Uzbekistan	317,200
Taiwan	800	Lebanon	222,100
Japan	762	USA	201,028
Cyprus	400	Canada	96,438
Germany	185	Iran	83,077

Switzerland	125	Russia	74,468
Egypt	50	Netherlands	72,448
Greece	20	France	43,709
India	20	Zimbabwe	980
		SAR	246
		Italy	107

As seen in the Table 11 the main markets for exports are Russia and the USA. Tobacco is mainly imported from Panama, Turkey, and Germany.

As the main exports of Armenian tobacco production goes, as stated above, to Russia and USA, the main trade conditions and imports requirements of these countries will be described below[17].

Russia:

Russia prefers imported raw tobacco due to low tariffs. Cigarette imports on the other hand are highly taxed. Imported leaf tobacco is charged a 20-percent value added tax which is compensated later in the price of manufactured tobacco products.

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

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

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

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

USA:

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

There is a tariff-rate-quota for imports of flue-cured, burley, and other light air-cured tobacco that are imported for manufacture of cigarettes. So far Armenia exports to USA only cigarettes and the restrictions imposed for tobacco products does not apply.

Trends in Prevalence and Consumption

As stated in the Introduction, the smoking prevalence in Armenia is rather high. No major researches and polling had been carried out due to the lack of resources: the problem studies have had more limited (in scale or in geography) character. This may be the reason, why the polling or research results vary a lot. Given this situation, it is complicated to choose the sound basis to represent the smoking prevalence.

According to the results of research carried out by the National Statistical Service (in cooperation with International Labor Organization and UNDP) only 29% of men and 1.24% of women smoke. The relevant results of the research of the National Tobacco Control Program of the Ministry of Health are accordingly 50% and 39.6%. As the survey of the NSS is more comprehensive and wide[18], we will rely on data of National Statistical Service, meanwhile, where applicable, making several adjustments from the survey of the Tobacco Control Program[19].

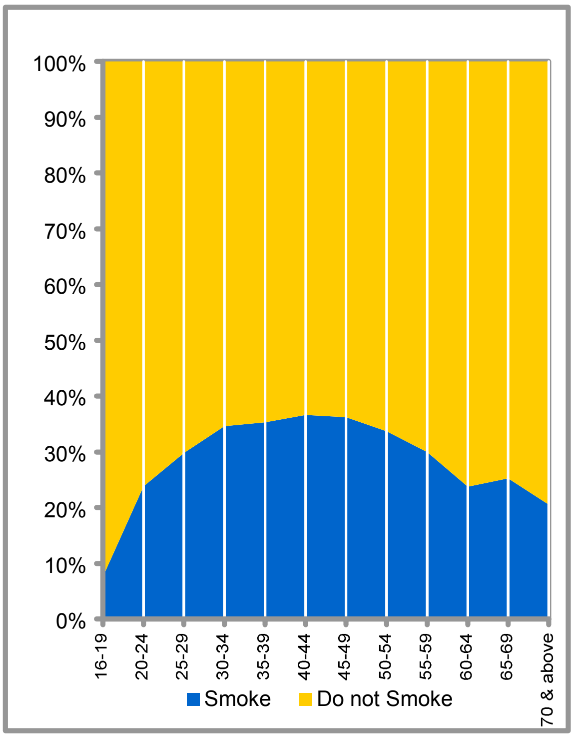
According to the findings of the survey, carried out by the National Statistical Service, the share of smoking population is especially big in the age group of 40-44 years - 36.6% (including about 75,0 % of men and about 2.0% of women).

This share is considerably smaller in the age groups below and above the aforementioned one: in the age group of above 70 years it is 20.4 % (including about 47 % of men and only 0.6 % of women), and in the age group of 15-19 years where it is 7,6% (including 19,6% of men, with no women smokers registered in the group).

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

Smoking is costly and not everyone can afford these costs. According to the survey results, the average daily cost of cigarettes per one smoker was AMD 137.5 in 2001 (0.24 USD), and the average monthly cost - AMD 4,125 (7.2), which is about 16% of average salary. Naturally, the impact of this factor in the unemployed group is higher than in the employed one.

Figure 8. Ratio of smokers vs. non-smokers (2001)[20]



The ratio of all smokers by education level is especially high among graduates of vocation training institutions - 39.7%; in the categories with higher, incomplete higher and secondary professional education, it amounted 28.4% on the average (30.9%, 22.4% and 27% by levels accordingly). The ratio of smokers among the population with primary education is 21.9%, and that among the population without primary education is 11.9%.

The low ratio of smokers in the latter two groups is preconditioned not by the low education level, but rather by the fact that this group is dominated by elderly persons whose smoking is limited by age and health considerations.

The overwhelming majority (61.3%) of cigarette consumers (4355 persons) smoke one pack per day. At the same time, daily consumption of men is higher than that of women. 33% of women and 79.5% of men smoke one and more packs a day.

The recent year's dynamics of tobacco products' sales indicates the positive trend in tobacco consumption, which can be explained weather by the increase in total quantity of smokers, or by more intensive smoking by average consumer.

Tobacco Policy Parameters

The tobacco policy in Armenia has not been shaped since the independence. The intentions to regulate the tobacco use and trade had been discrete and not consistent. Along with the strengthening of state power and law enforcement, the cigarette smuggling, which has reached enormous volumes, had been reduced during recent 5-6 years and the state budget started to collect stable revenues from tobacco trade and production. Nevertheless, the black market is quite large, thus granting a good opportunity for smugglers to continue their illegal economic activities.

> Armenia is ranked as a country having MOSTLY FREE economy, according to "2002 Index of Economic Freedom" by The Heritage Foundation. Meanwhile the same institution estimated Armenian black market to make up 40 to 53 percent of GDP.

The State had not established a simulating or restricting policy measures for the tobacco producers and farmers: no subsidies or quotas are established by the state. On the other hand a single company, which purchases tobacco harvest from the farmers, is prepaying the deal. Consequently it is more preferable for the farmers to grow tobacco, as a few other products' farming can provide such an advantage.

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

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

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

Table 4. The rates of fixed payments, as amended in the Law in December, 2001

Product Type	Units	Local	Imported
Cigars	USD per 1000 items	2200	3000
Cigarillos	USD per 1000 items	22	30
Cigarettes with filter	USD per 1000 items	8	11
Cigarettes without filter	USD per 1000 items	3.5	6
Cigars	USD per 1000 items	2200	3000

Considering that the local tobacco production is carried out by only two companies, both with foreign investments, and that these companies are enjoying relieved tax burden, as joint ventures, it becomes obvious that the economic policy of the state is not now seriously limiting the production of cigarettes, nor it is encouraging the latter.

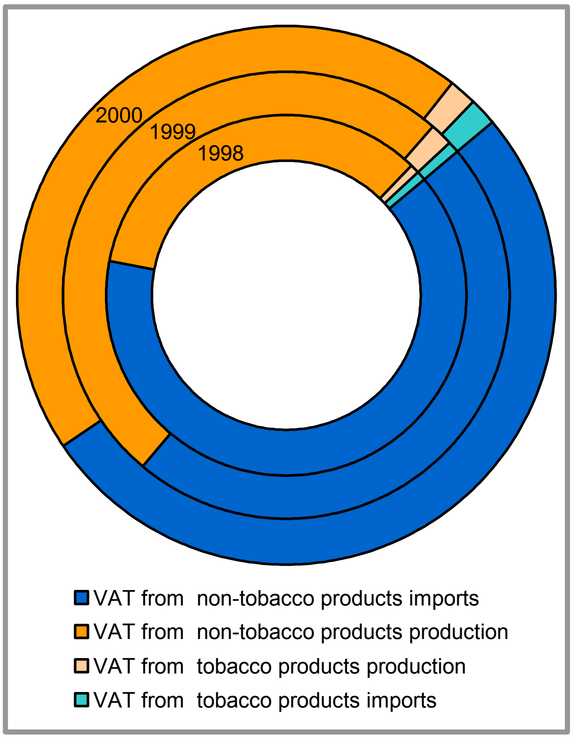
> Due to the supporting investment climate, established by the Government, the companies that are making investments in Armenia and the companies with foreign capital participation enjoy advantageous tax regime. Firstly, all investments made in Armenia do not undergo any import duties or taxes. Secondly, starting from the year 1998 , all companies, where more than 1 mln US dollars is invested by non-residents, are enjoying tax holidays according to the following scheme:
>
> **Year of foreign investment Profit tax deduction**

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

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

As seen from Figure 9, the VAT from tobacco products is small enough as compared to the other products' VAT.

Figure 9. Comparison of VAT revenues from tobacco products with overall VAT revenues from all other products [21]



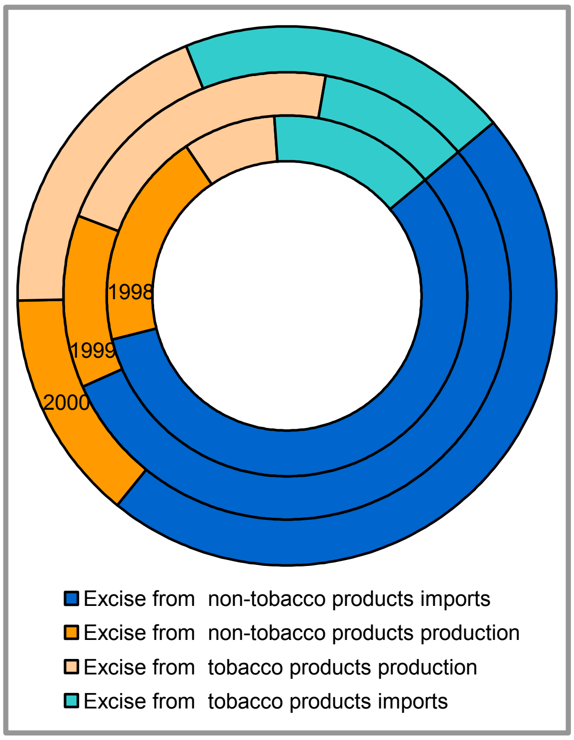
The mentioned is true both for local production and for the imports.

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

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

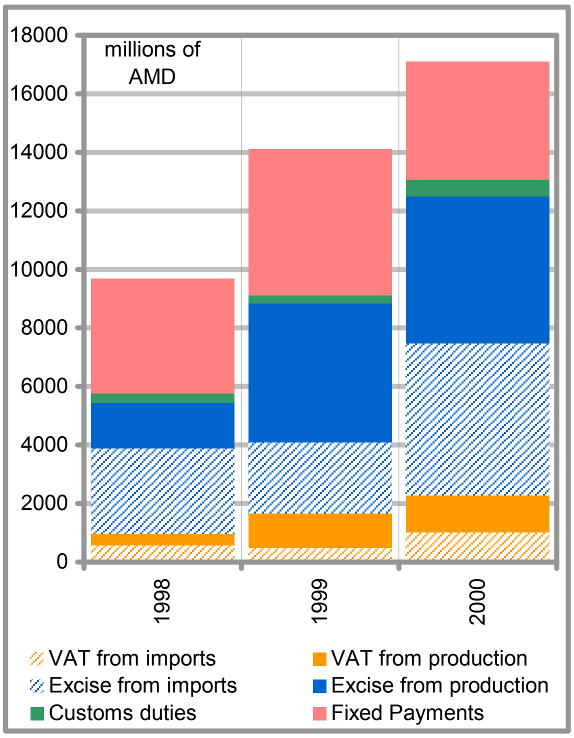
The budget revenues from tobacco industry, as stated above, have increased a lot and during last year they constituted about 11% of total budget tax revenues.

Figure 10. Comparison of Excise tax revenues from tobacco products with overall Excise tax revenues from all other products[22]



Obvious trends in tobacco production taxation volumes make the economy more sensitive towards the situation in the sector. Facing the continuous budget deficit and the lack of resources for its financing on the one hand, and the necessity of repayment of external debt, the need for extra resources in the budget is obtaining more decisive essence.

Figure 11. The overall revenue from tobacco products' taxation[23]



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

The Policy Practice

Tobacco use research has always been considered in Armenia under the highlight of its health impact. During the Soviet period the state had been periodically organizing several anti-smoking campaigns, mostly using propagandistic tools and advertising. The cigarette banning, although used in many state institutions, never had been perceived as a serious restriction. The control over teenage smoking was more effective, as the community had been keeping an eye over the teenager's bringing up.

Post Soviet period did not bring any structural changes in approaches towards tobacco use. Due to the economic circumstances the control over teenager's smoking was enlightened.

The tobacco products' advertising is partly restricted. The Law on Advertising sets several prohibitions to restrict children and youth access to tobacco advertising.

These are the articles, concerning the restrictions in tobacco advertising in the Law on Advertising of the RA:

Article 14. Defense of the Under-aged During Advertisement Production, Placing and Spreading

2. Advertising of alcoholic drinks and tobacco by radio and TV programs for children and youth, in printed publications concerning the under-aged, as well as in children's, educational, medical, cultural, sport organizations and institutions and their areas is forbidden.

Article 15. Peculiarities of Advertising for Certain Kinds of Goods

In advertisements of alcoholic drinks and tobacco it is forbidden:

a) to suggest that alcoholic drinks and tobacco have curing, stimulating, relaxing features;

b) to induce the consumers to widely use alcohol and tobacco, negatively assess their non-use or moderate use;

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

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

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

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

5. Advertising of alcoholic drinks and tobacco through electronic mass media during the hours from 7.00 a.m. to 9 p.m. is forbidden…

A draft Law is prepared to strengthen the control over tobacco use. It has several strict prohibitions over tobacco advertisement and use in public buildings and places. For example, it sets a complete banning on tobacco advertising on radio or TV.

Employment in Tobacco Industry

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

The employment in the tobacco industry does not constitute a big share in total employment. Coming back to overall employment in the tobacco industry, we have to do several adjustments to get the final estimation on its quantity.

Full time employment in agriculture is to be estimated by adjusting the figures in the Table 2 with the ratio of labor force proportions. It is estimated that in agricultural sector of Armenia 55.8% of the total labor force are full time workers, 9.6% - half time and 34.6 – seasonal[24] workers[25]. Adjusting these proportions with the total labor force raw in the Table 2, we get:

Table 12. The full time labor force in tobacco farming

1995	1996	1997	1998	1999	2000
435	133	245	820	5749	17724

Next, in leaf marketing and processing we have 800 employees for the years 2000 and 2001. The mentioned proportion for the processing industry is, accordingly 86.2%, 10.2%, 3.6%. The adjusted figure will be 745.

The same calculations for the cigarette manufacturing, retailing and wholesaling:

Table 13. Full time employment in cigarette manufacturing

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

Table 14. Full time employment in cigarette wholesale and retail trade[26]

	1995	1996	1997	1998	1999	2000
Retail	465	257	269	351	391	512
Wholesale	458	312	517	1373	1014	775
Total	923	569	786	1724	1405	1287

The overall employment in tobacco industry will be:

Table 15. Full time employment in tobacco industry (people)

	1995	1996	1997	1998	1999	2000
Tobacco farming	435	133	245	820	5749	17724
Leaf marketing and processing						745
Cigarette manufacturing	503	396	535	457	502	793
Wholesale and retail trade	923	569	786	1724	1405	1287
Total	1861	1098	1566	3001	7656	20549

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

Policy Alternatives

To estimate the possible impact of tobacco control policy on overall employment, several assumptions and statements should be done. Firstly, the lack of statistics in Armenia does not allow applying the widely accepted estimation method - input–output analysis. The problem is, that after the collapse of the USSR no such information is available and calculations made. The last available table of intersectoral balance (this was "soviet" description of the input – output table) refers to a country with completely different economic structure and is not applicable for the current estimation.

On the other hand, the tobacco industry peculiarities in Armenia allow making more simple estimations, which are yet as rational as in the case of analysis using input-output tables. This is the consequence of several specifications, which are common for Armenian tobacco industry. The first reason of this is the little number of companies engaged in the business. It makes possible to have a complete look at the production cycle and make reasonable assumptions. Second: the tobacco production sectors in Armenia are not interrelated with other branches of industry. All the row material for tobacco production is imported. This makes the economy less sensitive to the possible reduction of tobacco production. So the multiplier effect is maximally reduced in the case of Armenia.

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

While considering the policy alternatives for tobacco industry control the alternative between smoking restriction and tax policy should be discussed. As stated before, the Tobacco Control Program specialists have developed the draft law on tobacco control, which provisions strict measures towards smoking restriction. Although the adoption of the law is on its very preliminary stage, the strict tobacco control measures, included in the draft law should be considered as a real alternative for tobacco control policy. As discussed in the paper "Curbing the Epidemic: Governments and the Economics of Tobacco Control"[27] the maximally strict measures in tobacco control (cigarette advertisement banning) are estimated to cause the reduction in demand for cigarettes by about 6%.

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

Here it should be stated, that the profitability in cigarette production is much higher than in other branches of economy (estimated to reach an average value of 25% yearly). Given this situation it is hardly expectable that a company may reduce its resources and production volumes proportionally.

The next method to have an impact on smoking is increase in taxes on cigarettes. As discussed in the relevant analysis of Prabhat Jha and Frank J Chaloupka (The economics of global tobacco control) "…Tax increases are the single most effective intervention to reduce demand for tobacco (tax increases that raise the real price of cigarettes by 10% would reduce smoking by about 4% in high income countries and by about 8% in low income or middle income countries)". Armenia can be considered as a representative of the latter group. So, an assessment, that if the government increase taxes by 10%, the demand for cigarettes will drop by 8%, seems to be reasonable. To facilitate the estimation we will assume, that the change in demand will refer to both expensive and cheap cigarettes equally.

Having in mind the assumption above, it seems to be reasonable, that the local brands' demand will drop by about 5 percent.

To estimate the maximal possible impact of the tobacco control policy on the employment, we will assume that the authorities are ready to apply both measures against smoking restriction simultaneously. Then we can consider a reduction of the demand for the locally produced cigarettes by 9%. How will the tobacco industry employment react to such a change in the market?

The expenditures multiplier is estimated to be equal to about 1.7 in Armenia[28]. In case of 9% fall in demand for tobacco products, the released amount is likely to be directed to other sectors of economy of Armenia, creating additional demand in these sectors. The most preferred sectors here may be food production, services, agriculture and imports (having in mind, that Armenia is a country with low per capita income). All these sectors, like other sectors of economy possess a great potential for intensive growth. Small increase in demand for the production of any sector may not initiate extensive growth there. That's why impact of this factor may be omitted in current research as it is estimated to be extremely low.

Tobacco farming:

The households engaged in tobacco farming, may be affected a little if the single company, engaged in tobacco leaves marketing and processing, reduces its demand for the output of the farming. Only 2.5% of the cigarettes, based on the local tobacco farming output, are being exported. The total number of full time employees is estimated to be 17724 persons, minus 2.5% equals 17281.

It should be stated here, that the growth in tobacco farming production has an extensive nature (the productivity is nearly the same for recent years).

On the other hand the farmers are not expected to grow only one type of plant. Moreover, as stated in Figure 2, the tobacco is one of the least demanded products in the agriculture. Of course, the fact of production prepayment is a good advantage for tobacco farming. Nevertheless, currently several newly established enterprises are getting widely engaged in juice and canned goods production and also are prepaying the growth of several types of vegetables and fruits. This can be a good alternative for a tobacco farmer, crowded out from the tobacco industry.

On the other hand, about 35% of farmers in Armenia grow non tradable plants, for self consumption only. In countryside the barter is common phenomenon. So, if a farmer can-not obtain a contract for selling his product, or he can not find markets for his product, he may join the ones, who grow non-tradable plants.

So, if we consider a reduction of a demand for cigarettes, and assume, that such a reduction will cause a proportional reduction of re-courses in the tobacco industry, we can rather speak about a possible worsening of living conditions of about 1800 farmers, than about employment reduction.

> Also it is worth mentioning, that the fertilizers used in agriculture are imported by the government and, besides, the rural population mainly uses self-produced products, thus easing the possible impact of reduction of living conditions of the farmers on other branches of economy.

Leaf Marketing and Processing:

As the total number of employees in this sector is small, and if we even assume that 9 percent reduction in cigarette demand will cause similar reduction in labor force. 9% of 726 (=745-25% of it) persons equals 65 persons: an extremely small number comparing to the overall labor force.

Cigarette manufacturing:

As stated above, the cigarette manufacturing is based on the row materials imported from abroad. This is why the possible reduction in the manufacturing volumes may affect the rest of economy only by an insignificant reduction of consumption of those employees who are expected to be fired. Meanwhile, the manufacturing process is based on up to date technologies, where the productivity per one unit of labor force is high. Besides, the salaries of the employees here, as shown in Figure 5, are small enough, not to consider the labor force as the most vulnerable position in the production cycle. Even more, the reduction in demand may not affect the rate of profit of the company, as the relevant expenses on row materials and production utilities may also decrease. As the profitability in the sector, as already stated, is high, it is not likely for the companies to reduce the labor force, which is not a serious burden for them.

Even if such reduction takes place, the proportional reduction of the labor force in quantitative expression is less than 100 persons.

Wholesale and Retail Trade:

This sector is probably most sensitive towards the changes in demand for cigarettes. Meanwhile the labor force engage in wholesale and retail trade seems to be the most mobile. It is much easier for a trader to orientate to another product than for every other employee discussed above.

The number of full time wholesalers in the market is 775 for the year 2000. The full time retailers are estimated to be 512 persons. It is expected, that an average trader here is selling more than one product. The most possible expectation here in the case of reduction in demand is that the reaction of the sector will be not very sensitive. It is reasonable, that retail traders will be more mobile, than wholesalers. Even if considering maximum changes in employment, the result, again, is insignificant for overall employment in the country.

Conclusion

Although entering a new stage of development, the tobacco industry in Armenia is not yet developed enough to be considered as a key industry in the economy. The role of the tobacco industry should not be overestimated. Appropriate statistical or economical analyses are to be held periodically, to trace the trends in development of the industry, and, at least, to represent the correct situation there. The lack of statistics is a serious obstacle for the sound assessment of the role of industry for Armenian economy and the alternative cost of smoking.

The analysis of economic consequences of the tobacco control policy has not been practiced yet. The reason may be the uncertainty in the interpretation of tobacco control as a tool smoking regulation. Yet, the tobacco control is mainly considered in the highlight of health impact of smoking. Neither economic consequences of smoking reduction in general nor the employment issue in particular have been analyzed. The decisions on implementation of various smoking – restriction campaigns are currently being made one-sidedly, not considering all the possible effects of the measures.

The current review of the sector, limited in its scope of analyses and in statistical base, shows, that the employment in the sector is small enough and the profit rate in the cigarette manufacturing is high enough to reasonably conclude the employment in the country may undergo a slight changes if the government accepts a strategy of maximally reduce the smoking prevalence in the country.

Yet, the mentioned conclusion can be considered as more general, as it is based rather on logical conclusions, than on econometric analysis, due to the mentioned above problems and discrepancies in statistical sources.

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

The assessment of budget revenues, not viewed as a target for current review, yet is an important issue to be considered while making decisions on tax increase on cigarette products.

Letting aside the abovementioned, the most important action of the research institutions and state authorities is the work out of a national concept of smoking reduction policy, which would have been well targeted and comprehensive and would address all the aspects of the smoking reduction policy. Such a concept would have set the framework of the further studies and specifications of concrete actions to take to achieve the goals.

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

[2] Death and Taxes: Economics of Tobacco Control; Prabhat Jha, Joy de Beyer, and Peter S. Heller. "Finance and Development". IMF. December 1999

[3] "Agriculture in the Republic of Armenia": Statistical Yearbook 1990-1999; National Statistical Service of the RA; Yerevan 2001

National Statistical Service. Official Letter #18-3-17, 22/10/2001

Armenia Statistical Yearbook 1990, State Department of Statistics, State Registry and Analysis of the RA, Yerevan 1991

[4] "Agriculture in the Republic of Armenia": Statistical Yearbook 1990-1999; National Statistical Service of the RA; Yerevan 2001

[5] Same sources as for **Figure** 1

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

[7] Estimation

[8] Statistical Yearbook of South Caucasus, 2002

[9] "The Socio-economic Situation in Armenia: year 2000". Informational analytic report, National Statistical Service of the RA. Yerevan 2001

[10] Statistical Yearbook of Armenia - 1995,1996. Ministry of Statistics, State Register and Analysis. Yerevan 1998

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[11] "The Socio-economic Situation in Armenia: year 2000". Informational analytic report, National Statistical Service of the RA. Yerevan 2001

[12] Statistical Yearbook of Armenia - 1997,1998. National Statistical Service of RA. Yerevan 2001

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[13] Statistical Yearbook of Armenia - 1997,1998. National Statistical Service of RA. Yerevan 2001

"The Socio-economic Situation in Armenia: year 2000". Informational analytic report, National Statistical Service of the RA. Yerevan 2001

[14] National Statistical Service. Official Letter # 18-3-17, 22/10/2001

[15] National Statistical Service. Official Letter # 18-3-17, 22/10/2001

[16] National Statistical Service. Official Letter # 18-3-17, 22/10/2001

[17] Import Requirements and Restrictions for Tobacco Products in Foreign Markets. Tobacco: World Markets and Trade Supplemental Report. US Department of Agriculture. Foreign Agricultural Service. July 1999

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

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

[20] National Statistical Service

[21] The Ministry of Finance and Economy of RA

[22] The Ministry of Finance and Economy of RA

[23] The Ministry of Finance and Economy of RA

[24] It is assumed that seasonality in labor force means half year of work.

[25] Strengthening Social Protection/Social Risk Management System; Improving the Poverty Benefit Targeting: Labor market aspects. Report. The World Bank. April 2001

[26] The labor force proportion for the wholesale and retail sector is as follows: full time – 55%, half time – 34.7% and seasonal – 10.3%.

[27] The World Bank, 1999

[28] Central Bank of Armenia estimations, not official