
International Smoking Statistics

Web Edition

A collection of worldwide historical data

Bulgaria

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¹ See footnotes to Tables

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¹ See footnotes to Figures

Preface

International Smoking Statistics is a collection of smoking data covering most of Europe and various other economically developed countries. The second edition (published by Wolfson Institute of Preventive Medicine and OUP, 2002, www.oup.co.uk/isbn/0-19-850856-5) included data for 30 countries up to 1995. Since 2006, work has been ongoing to make individual country updates available online. Please register at www.pnlee.co.uk if you wish to be informed when updates are posted.

The methods used in the web edition are essentially unchanged from those of the second edition, although some minor changes are included in the online Methods chapter. Readers are strongly recommended to consult the Methods chapter.

The two main types of data presented are sales data and survey data. We give the results of the original authors as closely as possible, whilst presenting them in a uniform format.

Sales data give the total national consumption of tobacco. Data on sales of cigarettes and of all tobacco products are presented, usually from about 1920. Estimates of the consumption of hand-rolled cigarettes are included where possible, as are data on the types of manufactured cigarettes sold. The Tobacco Research Council provided most of the sales data until 1973, while later sales data were obtained from government and industry sources.

Survey data provide information on the prevalence and amount of smoking according to age and sex. These were obtained from a wide variety of surveys. Some survey data are available for the early part of the 20th century, but for most countries they are available only from the 1950s or 1960s onwards.

In additional tables we calculate further statistics by combining sales and survey data using certain standardized assumptions. The figures are intended to provide an easily interpretable summary of the data presented in the tables, and the commentary has deliberately been kept to a minimum.

In this chapter, the survey data are largely reproduced from the 2nd edition, which covered the years up to 1995, subject to a few amendments for consistency with the Web edition. For the subsequent years, only certain multinational surveys have been added.

Downloads

Updates currently available to download from <http://www.pnlee.co.uk/iss.htm> include:

Methods, including

Appendix I: *Estimated size of adult population;*

Appendix II: *Comparisons of manufactured and hand-rolled cigarettes and differences in the way they are smoked;*

Appendix III: *Consumption category estimation;*

Comparisons between countries;

Updated country chapters (see *Methods* for current list);

Tables from each updated chapter, in Excel format, including extended versions of Tables 4 and 6 and a customisable version of Figure 3;

Supplement 1: *Estimation of sex-specific smoking statistics by standardized age groups and time periods*. [The web edition comprises a brief Update Note, together with tables (in Excel format only) for the countries with a chapter in the web edition. The original Supplement 1 to the second edition (an extended version of Appendix IV to the second edition) is also available and gives a full description and tables for the other countries]. No update to Supplement 1 is planned for countries (including Bulgaria) which have only been partially updated for the web edition.

Also available from the same source are:

Supplement 2 to the second edition: *Estimating past smoking habits by an indirect method. An investigation into a method based on recall, with application to Great Britain*. [This supplement is an extended version of Appendix V to the second edition];

An updated version of Appendix V Bibliography. [This bibliography lists published papers that use an indirect method for estimating past smoking habits based on recall];

IMASS, a comprehensive Excel database system, based on WHO mortality data and smoking statistics from Supplement 1. The IMASS system includes powerful routines for creating graphs and tables.

Acknowledgements

We would like to acknowledge the tobacco industry for their financial support and for providing some of the sales data in International Smoking Statistics.

We would also like to thank the many government and research organizations and individuals who supplied much of the information included.

We thank Yvonne Cooper, Pauline Wassell and Diana Morris for maintenance of our references database.

We are indebted to G. F. Todd, past director of the Tobacco Research Council, who, shortly before he died in 1988, had prepared a draft report from which the first edition of International Smoking Statistics developed.

Professor Nicholas Wald was an editor of earlier editions, and we thank him for his support and encouragement.

We alone bear the responsibility for the analysis and interpretation of the data presented.

Introduction

Years considered

In this chapter, the sales data have been fully updated, but the survey data are largely reproduced from the 2nd edition, which covered the years up to 1995, with only certain multinational surveys added for the subsequent years.

Sales data

See Tables 1-3, Figures 1 and 2 and *Notes on sources of sales data*.

Between 1913 and 1923, the consumption of manufactured cigarettes per adult increased from 0.2 to 2 cigarettes per day. For the following decade, data are available only for manufactured cigarettes and cigarette tobacco (i.e. for hand-rolled cigarettes) combined. This implies that consumption of hand-rolled cigarettes per adult was about 1 cigarette per day around 1923. Consumption of all cigarettes was 3-4 cigarettes per day until 1930, and fell below 2 by 1934. No data are then available until 1960.

Consumption of manufactured cigarettes per adult increased from 4 cigarettes per day in 1960 to about 7 in the 1990s. Smuggling and illegal trade were significant problems from the mid-1990s, and there are major discrepancies in estimates of consumption from different sources. Estimates from United States Department of Agriculture (USDA) and KPMG (the latter adjusting for cross-border sales, counterfeit and contraband since 2007) suggest that consumption per adult increased to 10 per day in the early 2000s, and then reduced to 6 by 2014, while another source (National Statistical Institute) suggests that consumption fell from 3 to 2 between 1999 and 2013.

Virtually no cigarettes were filtered until the late 1960s, but the proportion increased rapidly, passing 50% in the mid-1970s and reaching 95% by the mid-1980s, although it dipped in the mid-1990s.

Between 1913 and 1923, the percentage of all tobacco consumed in cigarettes increased from 10% to 65%, with most of the remainder sold as smoking mixtures. A change in the categories reported for 1924 suggests that by that date virtually all smoking mixtures were used for hand-rolled cigarettes. Insignificant quantities of snuff were also used. With the exception of cigar consumption for the years 2007-2011, no data are available on the consumption of tobacco products other than cigarettes after 1960, but it is believed to be low.

Survey data

See Tables 4-8, Figures 3 and 4 and *Notes on sources of survey data*.

At the time of writing the 2nd edition, very few surveys were available on the smoking situation in Bulgaria, and some data were presented beyond 1995 (the end of the period usually considered). The estimated prevalence of smoking among men aged 15 years and over was 40-50% in the 1990s. Among women, it was estimated as 17-19% by two surveys, although unofficial estimates by USDA put it much higher, almost equal to the prevalence among men.

Among both men and women, there is a markedly lower prevalence of smoking among older age groups. One source estimated that more teenage girls than boys smoked.

Comparison of sales and survey data was only possible in one case, where consumption was under-reported by about 40%. Between 1989 and 1997, the estimated number of manufactured cigarettes smoked per person per day (sales-adjusted) varied for men between 8-11 cigarettes, and for women between 2-5 cigarettes.

The multinational surveys added in this edition, referring to 1996 onwards, suggest that the prevalence of regular smoking among men aged 15 years and over varied around 40%, with up to 53% when occasional smokers were included. Among women, estimates varied around 20-30% for regular smoking, and around 30-35% for all smoking. The estimated number of manufactured cigarettes smoked per person per day (sales-adjusted to the USDA/KPMG sales data) was around 13 for men from 2002 to 2008, then fell to 8; for women it remained around 4-6 cigarettes. These results should be regarded with caution due to the uncertainty of the sales data, and the limited surveys considered.

Table 1.1 Total annual consumption of tobacco products, 1913-1935

Year	Manufactured cigarettes ¹		Smoking mixtures ² tonnes	Snuff tonnes	All tobacco products tonnes
	tonnes	millions			
1913	254	254	2 264	2	2 519
1920	1 059	1 059	2 348	3	3 410
1921	1 862	1 862	2 467	2	4 331
1922	2 667	2 667	1 785	2	4 454
1923	3 100	3 100	1 626	1	4 726
1924	4 169	4 169	13	1	4 183
1925	5 196	5 196	17	1	5 214
1926	4 663	4 663	26	1	4 690
1927	4 574	4 574	25	0.5	4 600
1928	4 999	4 999	38	0.5	5 038
1929	4 875	4 875	42	0.5	4 918
1930	4 477	4 477	22	0.5	4 499
1931	3 850	3 850	38		3 888
1932	3 433	3 433	33		3 466
1933	2 932	2 932	52		2 984
1934	2 720	2 720	106	<0.2	2 826
1935	3 070	3 070	46		3 116

Source: see *Notes on sources of sales data: Consumption data 1913-1935*, p. 28.

Table 1.2 Total annual sales or consumption of tobacco products, 1960-2014

Year	Manufactured cigarettes						Cigars millions	
	Legal sales			Consumption				
	Euromonitor millions	KPMG(1) millions	KPMG(2) millions	USDA† millions	WHO millions	NSI‡ millions		Euromonitor millions
1960				8 513				
1961				9 208				
1962				9 763				
1963				10 755				
1964				10 121				
1965				8 899				
1966				11 692				
1967				7 932				
1968				11 047				
1969				15 006				
1970				9 814	10 158			
1971				12 350	12 907			
1972				12 931	14 391			
1973				13 341	13 650			
1974				16 577	16 882			
1975				13 221	13 713			
1976				14 000	12 575			
1977				16 643	15 218			
1978				13 906	13 910			
1979				14 000	20 100			
1980				13 000	16 668			
1981				13 000	14 430			
1982				13 000	16 652			
1983				14 400	11 667			
1984				16 000	16 870			
1985				17 000	17 423			
1986				18 468	18 386			
1987				16 000	15 861			
1988				13 768	14 072			
1989				14 000	14 574			
1990				12 200	15 937			
1991				15 726	22 068			
1992				17 927	16 397			
1993				18 774	18 348			
1994				15 107	15 220			
1995				16 000	13 933			
1996				19 103	17 355			
1997				18 600	17 825			
1998				18 000	21 932			
1999				19 000	21 797	8 211		
2000				19 000	22 816	8 170		
2001				19 000		7 913		
2002				21 808		7 208		
2003				24 408		7 652		
2004	21 455			22 900		7 246	22 743	
2005	21 208					7 167	22 905	
2006	20 814	19 600				5 589	23 312	
2007	20 066	21 900	17 380			6 545	23 042	19 710
2008	18 774	17 500	18 280			6 554	22 696	21 250
2009	16 457	11 700	16 330			5 903	22 436	19 830
2010	16 692	10 800	10 640			4 451	21 969	15 570
2011			10 510			4 056		13 360
2012			11 190			4 391		13 420
2013			11 140			4 332		13 790
2014			10 930					13 500

Source: see *Notes on sources of sales data: Sales and consumption data for 1960 onwards*, p.28.

† Also shown in Table 2 and Figure 2.

‡ Also shown as "alternative" in Figure 2.

Table 1.3 Percentage of sales of tobacco in different forms (by weight), selected years

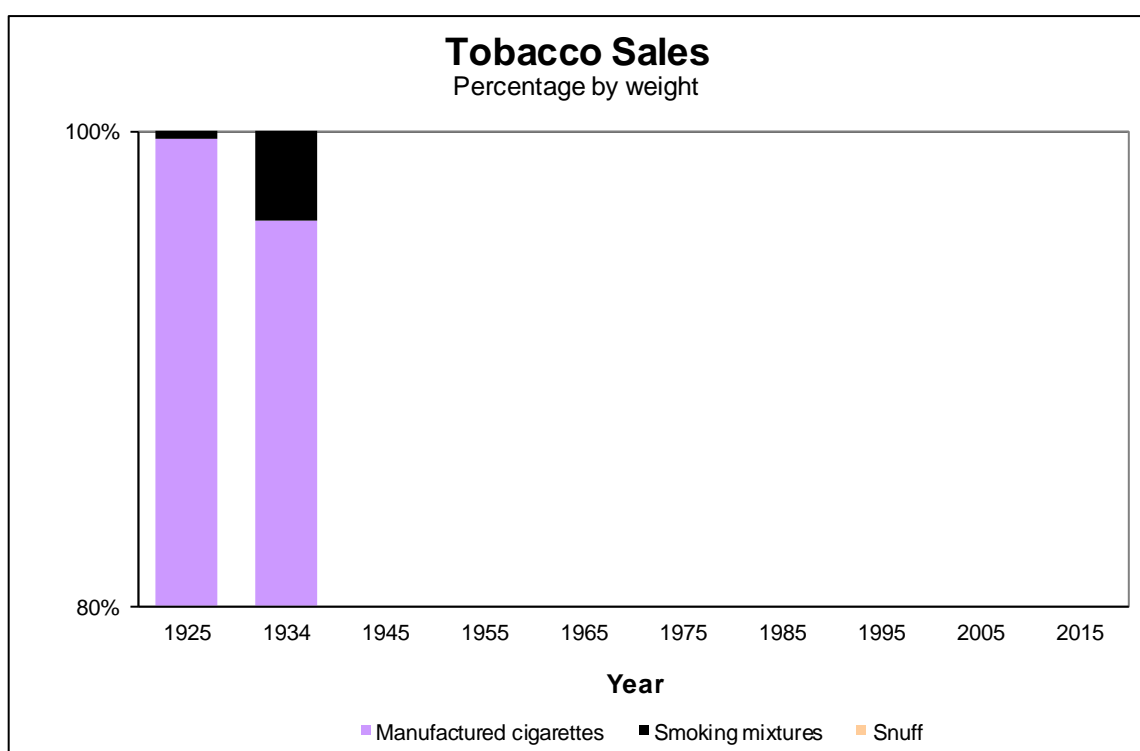
Year	Manufactured cigarettes ¹ %	Smoking mixtures ² %	Snuff %
1913	10.1	89.9	0.1
1925	99.7	0.3	0.0
1934	96.2	3.8	0.0

1. Includes cigarette tobacco 1925, 1934

2. Includes cigarette tobacco 1913

Source: calculated from Table 1.1.

Figure 1 Percentage of sales of tobacco in different forms (by weight), selected years



Source: Table 1.3.

Table 1.3 includes data for 1913 which are not shown in this figure because the category definitions are inconsistent with those used in the years shown.

Table 2 Sales of cigarettes and of all tobacco products.
Annual total and average per adult (age 15 years and over) per day

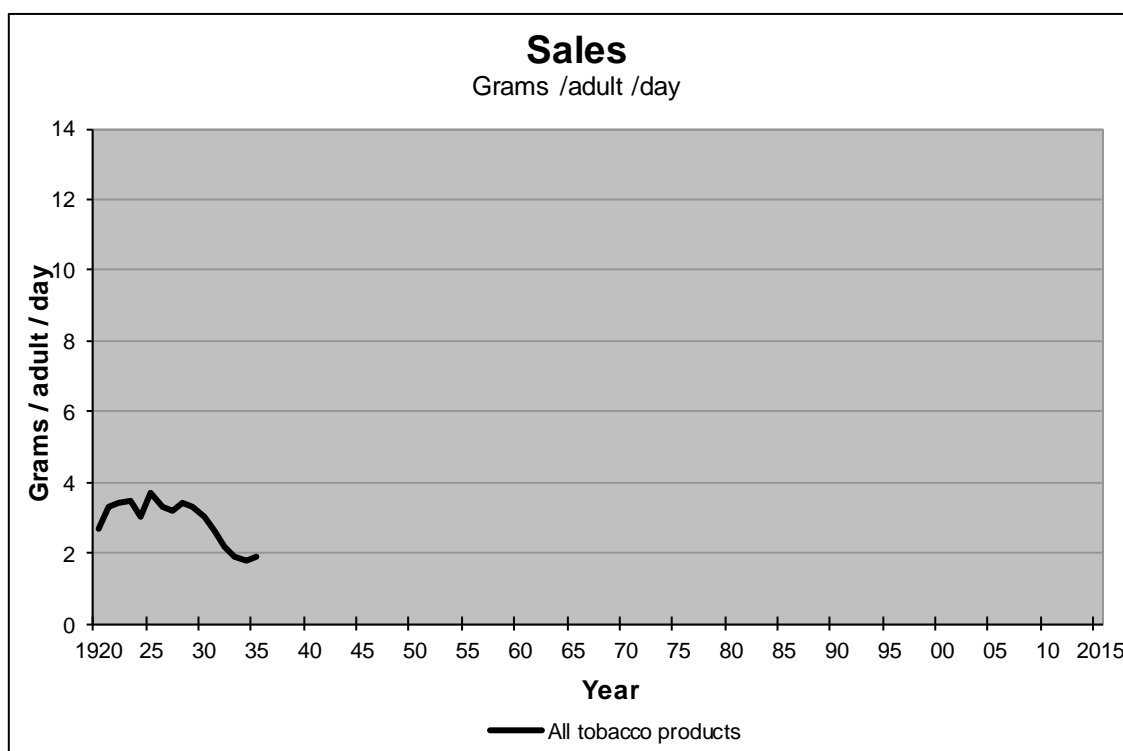
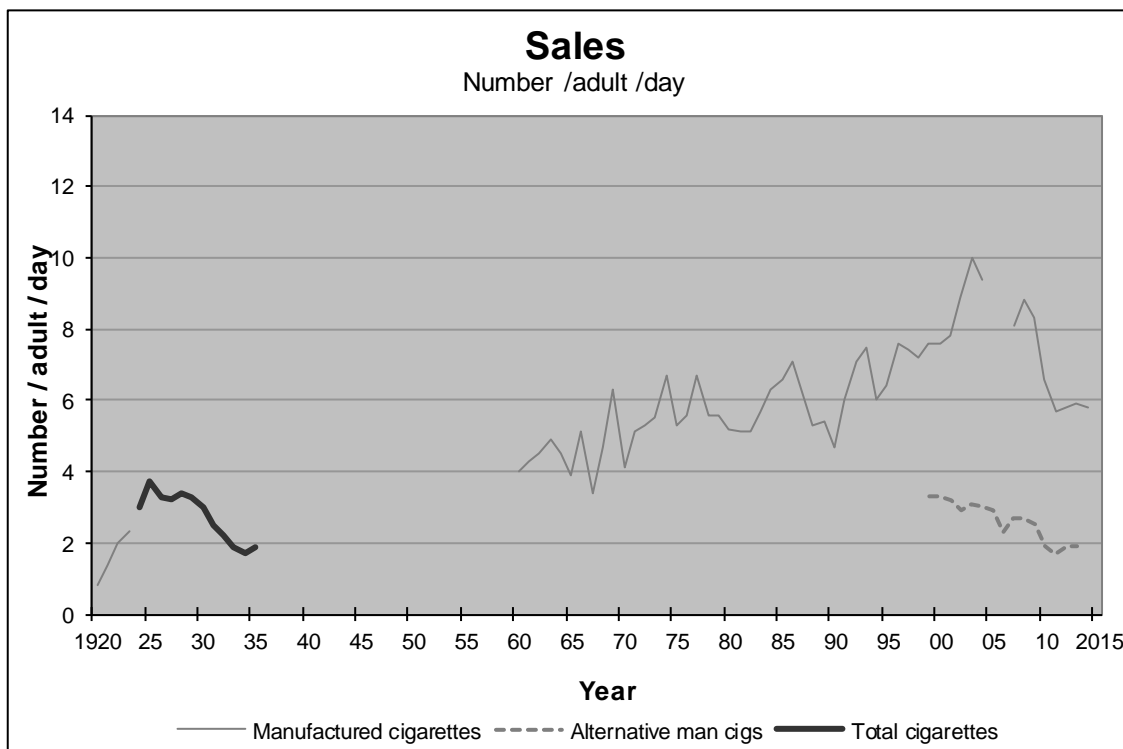
Year	Manufactured cigarettes		Hand-rolled cigarettes		Total cigarettes		All tobacco products	
	Total annual millions	Number/ adult/day	Total annual millions	Number/ adult/day	Total annual millions	Number/ adult/day	Total annual tonnes	Grams/ adult/day
1913	254	0.2					2 519	2.1
1920	1 059	0.8					3 410	2.7
1921	1 862	1.4					4 331	3.3
1922	2 667	2.0					4 454	3.4
1923	3 100	2.3					4 726	3.5
1924					4 169	3.0	4 183	3.0
1925					5 196	3.7	5 214	3.7
1926					4 663	3.3	4 690	3.3
1927					4 574	3.2	4 600	3.2
1928					4 999	3.4	5 038	3.4
1929					4 875	3.3	4 918	3.3
1930					4 477	3.0	4 499	3.0
1931					3 850	2.5	3 888	2.6
1932					3 433	2.2	3 466	2.2
1933					2 932	1.9	2 984	1.9
1934					2 720	1.7	2 826	1.8
1935					3 070	1.9	3 116	1.9
1960	8 513	4.0						
1961	9 208	4.3						
1962	9 763	4.5						
1963	10 755	4.9						
1964	10 121	4.5						
1965	8 899	3.9						
1966	11 692	5.1						
1967	7 932	3.4						
1968	11 047	4.7						
1969	15 006	6.3						
1970	9 814	4.1						
1971	12 350	5.1						
1972	12 931	5.3						
1973	13 341	5.5						
1974	16 577	6.7						
1975	13 221	5.3						
1976	14 000	5.6						
1977	16 643	6.7						
1978	13 906	5.6						
1979	14 000	5.6						
1980	13 000	5.2						
1981	13 000	5.1						
1982	13 000	5.1						
1983	14 400	5.7						
1984	16 000	6.3						
1985	17 000	6.6						
1986	18 468	7.1						
1987	16 000	6.2						
1988	13 768	5.3						
1989	14 000	5.4						

Table 2 (continued)

Year	Manufactured cigarettes		Hand-rolled cigarettes		Total cigarettes		All tobacco products	
	Total annual millions	Number/ adult/day	Total annual millions	Number/ adult/day	Total annual millions	Number/ adult/day	Total annual tonnes	Grams/ adult/day
1990	12 200	4.7						
1991	15 726	6.0						
1992	17 927	7.1						
1993	18 774	7.5						
1994	15 107	6.0						
1995	16 000	6.4						
1996	19 103	7.6						
1997	18 600	7.4						
1998	18 000	7.2						
1999	19 000	7.6						
2000	19 000	7.6						
2001	19 000	7.8						
2002	21 808	8.9						
2003	24 408	10.0						
2004	22 900	9.4						
2007	19 710	8.1						
2008	21 250	8.8						
2009	19 830	8.3						
2010	15 570	6.6						
2011	13 360	5.7						
2012	13 420	5.8						
2013	13 790	6.0						
2014	13 500	5.9						

Source: Manufactured cigarettes, total cigarettes and all tobacco products, Tables 1.1 and 1.2 (using USDA and KPMG consumption data for 1960-2004 and 2007-2014 respectively). Population, see *Population*, Methods p. 14.
A column for hand-rolled cigarettes is shown as standard for all chapters, although for Bulgaria no estimates are available, see *Notes on sources of sales data: Estimates of numbers of hand-rolled cigarette*, p. 31.

Figure 2 Sales of (i) manufactured and total¹ cigarettes and (ii) all tobacco products. Average per adult (aged 15 years and over) per day



¹ Includes cigarette tobacco.

Source: Table 2, except alternative manufactured cigarettes which are the National Statistical Institute (NSI) data, Table 1.2. Table 2 includes data for earlier years (not shown in this figure).

Table 3 Manufactured cigarettes: percentage of total sales as filter cigarettes

Year	Filter %
1966	1.0
1967	10.8
1968	38.8
1969	40.0
1970	49.5
1971	50.3
1972	17.2
1973	27.0
1974	47.7
1975	56.4
1977	77.9
1978	76.6
1979	80.3
1980	90.0
1981	90.0
1982	90.0
1983	94.0
1984	95.5
1985	95.7
1986	96.3
1987	96.3
1988	96.2
1989	97.2
1990	95.9
1991	94.5
1992	89.7
1993	84.4
1994	90.7
1995	93.3
1996	90.0
1997	93.1
1998	94.0
1999	89.7
2000	88.8
2001	88.3
2002	98.5
2003	98.5
2004	98.4

Source: see *Notes on sources of sales data: Plain/Filter cigarette sales*, p. 31.
There is also limited information in the *Notes on Menthol cigarette sales*, p. 31, *Slim cigarette sales*, p. 31, and *Tar, nicotine and CO machine yields of cigarettes*, p. 32.

Table 4M Prevalence of smoking, males: selected surveys by age

Year	Source	Product	Frequency	Age Groups																	All ages																			
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60		65	70	75	80+															
89	1	U	A							*						65				*						49														
96	3	U	U													49																								
97	2	UC	R								48		58		52		41		16			6			38															
97	4	U	R													49																								
99	6	UC	*																			38																		
99	6	UC	A																			48																		
01	9	U	R														32		58		57		51		41		20		9		3	43								
01	9	U	A														45		68		65		61		48		24		13		10	51								
02	7	U	U																36		81		64				31					52								
02	8	UC	A																			31																		
02	8	A*	A																				33																	
03	6	UC	*																			34																		
03	6	UC	A																				42																	
05	7	MC	R																				30				49		48			23	37							
05	7	TC	R																				30				49		48			23	38							
05	7	A	R																				30				49		48			23	38							
05	7	MC	U																				38				56		53			28	43							
05	7	TC	U																				38				56		53			29	44							
05	7	A	U																				38				56		55			29	44							
06	5	A	*																				4			23														
06	5	A	R																				7			28														
06	7	MC	R																					39				51		41			29	40						
06	7	TC	R																					39				51		41			30	40						
06	7	A	R																					39				51		41			30	40						
06	7	MC	U																					41				54		43			31	42						
06	7	TC	U																					41				54		43			32	42						
06	7	A	U																					41				54		43			32	42						
07	6	UC	*																					28																
07	6	UC	A																					36																
08	8	UC	A																					24																
08	8	A*	A																					26																
08	10	TC	R																					28			54		55		52		40		15		8		3	40
09	7	MC	R																						48				56		60			29				47		
09	7	TC	R																						46				58		63			29				48		
09	7	MC	A																						48				58		64			30				49		
09	7	TC	A																						46				58		63			29				48		
09	7	A	A																						50				58		64			30				49		
10	11	TC	R																																					
10	11	TC	A																																					
11	6	UC	*																						24															
11	6	UC	A																						33															
12	7	MC	R																						38				50		48			25				39		
12	7	TC	R																						40				52		53			25				42		
12	7	A	R																						40				52		52			25				42		
12	7	MC	A																						40				52		51			25				41		
12	7	TC	A																						40				53		54			25				42		
12	7	A	A																						40				53		53			25				42		
14	5	A	*																						4			17												
14	5	A	R																						7			21												

Source: see *Notes on sources of survey data*, p. 32
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products

Frequency: A = all smokers (including occasional)
 R = regular or daily smokers
 U = unspecified
 * = refer to *Notes on sources of survey data*, p. 32
 All ages: relates to ages reported; as given in original source

Table 4F Prevalence of smoking, females: selected surveys by age

Year	Source	Product	Frequency	Age Groups																	All ages					
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60		65	70	75	80+	
89	1	U	A					*				35					*								17	
96	3	U	U																						47	
97	2	UC	R									37		30		21		9		2				0		17
97	4	U	R																							58
99	6	UC	*																							41
99	6	UC	A																							51
01	9	U	R																							29
01	9	U	A																							37
02	7	U	U																							32
02	8	UC	A																							43
02	8	A*	A																							42
03	6	UC	*																							39
03	6	UC	A																							50
05	7	MC	R																							30
05	7	TC	R																							30
05	7	A	R																							30
05	7	MC	U																							43
05	7	TC	U																							43
05	7	A	U																							43
06	5	A	*																							6
06	5	A	R																							11
06	7	MC	R																							38
06	7	TC	R																							38
06	7	A	R																							38
06	7	MC	U																							44
06	7	TC	U																							44
06	7	A	U																							44
07	6	UC	*																							35
07	6	UC	A																							45
08	8	UC	A																							32
08	8	A*	A																							32
08	10	TC	R																							18
09	7	MC	R																							28
09	7	TC	R																							34
09	7	MC	A																							34
09	7	TC	A																							34
09	7	A	A																							34
10	11	TC	R																							36
10	11	TC	A																							46
11	6	UC	*																							33
11	6	UC	A																							46
12	7	MC	R																							36
12	7	TC	R																							36
12	7	A	R																							36
12	7	MC	A																							36
12	7	TC	A																							36
12	7	A	A																							36
14	5	A	*																							4
14	5	A	R																							7

Source: see *Notes on sources of survey data*, p. 32
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products

Frequency: A = all smokers (including occasional)
 R = regular or daily smokers
 U = unspecified
 * = refer to *Notes on sources of survey data*, p. 32
 All ages: relates to ages reported; as given in original source

Table 5M Number of cigarettes smoked per smoker per day, males:
selected surveys by age

Year	Source	Product	Estimated	Age Groups																	All ages		
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60		65	70
97	2	UC	E	20																			
99	6	UC	E	11																			
01	9	UC	E*	12					12			14		14		14		12		13		*	13
03	6	UC	E	11																			
05	7	TC	E	11					16			18		13					15				
06	7	TC	E	13					15			16		13					15				
07	6	UC	E	13																			
08	10	TC	E*	17					22			22		22		21		20		16		*	21
09	7	TC		14					18			20		18					18				
10	11	MC		17																			
10	11	TC		17																			
11	6	UC	E	11																			
12	7	TC		14					18			19		16					17				

Source: see *Notes on sources of survey data*, p. 32
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

Estimated: E = mean estimated from percentage distribution
 (see also *Consumption category estimation*, Methods
 p. 11, and Appendix III)
 * = refer to *Notes on sources of survey data*, p. 32
 All ages: relates to ages reported; as given in original source

Table 5F Number of cigarettes smoked per smoker per day, females:
selected surveys by age

Year	Source	Product	Estimated	Age Groups																	All ages
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60	
97	2	UC	E	13																	
99	6	UC	E	9.7																	
01	9	UC	E*	11					10	11	11	11	*	*	*						11
03	6	UC	E	11																	
05	7	TC	E	9.9					11	11	9.1									11	
06	7	TC	E	9.4					10	9.8	11									10	
07	6	UC	E	12																	
08	10	TC	E*	14					15	16	15	15	16	*	*						15
09	7	TC	E	12					13	13	9.6									12	
10	11	MC		13																	
10	11	TC		14																	
11	6	UC	E	11																	
12	7	TC		11					13	13	11									13	

Source: see *Notes on sources of survey data*, p. 32
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

Estimated: E = mean estimated from percentage distribution
 (see also *Consumption category estimation*, Methods
 p. 11, and Appendix III)
 * = refer to *Notes on sources of survey data*, p. 32
 All ages: relates to ages reported; as given in original source

Table 6M Number of cigarettes smoked per person per day, males:
selected surveys by age; with percentage total sales

Year	Source	Product	Age Groups																All ages	% Total sales				
			12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55			60	65	70	75
97	2	UC	7.6																	65% ^m				
99	6	UC	4.0																			**		
01	9	UC*	3.7			7.2			7.7			7.0			5.7			2.3		1.2		*	5.5	50% ^m
03	6	UC	3.8																			**		
05	7	TC	3.4			7.8			8.5			3.1						5.7	43% ^m					
06	7	TC	4.9			7.8			6.6			4.0						5.8	50% ^m					
07	6	UC	3.7																			**		
08	10	TC*	4.8			12			12			11			8.5		3.1		1.2		*	8.6	63% ^m	
09	7	TC	6.2			11			12			5.2						8.6	73% ^m					
10	11	TC	7.7																	96% ^m				
11	6	UC	2.6																			**		
12	7	TC	5.4			9.3			10			4.1						7.2	92% ^m					

Source: *Notes on sources of survey data*, p. 32
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

* = refer to *Notes on sources of survey data*, p. 32
 All ages: relates to ages reported; as given in original source
 % Total sales: estimated % of total sales of M = manufactured or T = total cigarette consumption implied by survey, sexes combined
 ** = cannot be calculated
 -- = adjusted by original author

Table 6F Number of cigarettes smoked per person per day, females:
selected surveys by age; with percentage total sales

Year	Source	Product	Age Groups																	All ages	% Total sales				
			12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60			65	70	75	80+
97	2	UC	2.2																		65% ^m				
99	6	UC	4.0																		**				
01	9	UC*	3.0			4.5			4.1			2.5			0.8			*			* *			2.4	50% ^m
03	6	UC	4.3																		**				
05	7	TC	3.0			4.2			3.9			0.5									2.6	43% ^m			
06	7	TC	3.5			4.4			2.9			0.6									2.5	50% ^m			
07	6	UC	4.3																		**				
08	10	TC*	2.5			4.5			5.5			3.9			1.5			0.5			* *			2.8	63% ^m
09	7	TC	4.1			6.1			5.1			1.1									3.6	73% ^m			
10	11	TC	5.1																		96% ^m				
11	6	UC	3.6																		**				
12	7	TC	4.0			5.9			5.8			1.2									3.8	92% ^m			

Source: *Notes on sources of survey data*, p. 32
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

* = refer to *Notes on sources of survey data*, p. 32
 All ages: relates to ages reported; as given in original source
 % Total sales: estimated % of total sales of M = manufactured or T = total cigarette consumption implied by survey, sexes combined,
 ** = cannot be calculated
 -- = adjusted by original author

Table 7M Number of cigarettes smoked per person per day, sales-adjusted, males:
selected surveys¹ by age; with percentage total sales

Year	Source	Product	Age Groups																	All ages	% Total sales				
			12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60			65	70	75	80+
97	2	UC	12																		65% ^m				
01	9	UC*	7.4					14			15			14			11		4.5		2.4		*	11	50% ^m
05	7	TC	7.8					18			20			7.0							13	43% ^m			
06	7	TC	9.7					15			13			7.9							12	50% ^m			
08	10	TC*	7.6					19		19		18		13		4.9		1.9		*		14	63% ^m		
09	7	TC	8.6					15			17			7.2							12	73% ^m			
10	11	TC	7.9																		96% ^m				
12	7	TC	5.8					10			11			4.4							7.8	92% ^m			

¹ Based on those surveys in Table 6 with data for both sexes and age range at least 21-64 (see *Cigarette consumption per person*, Methods p. 11).

Source: *Notes on sources of survey data*, p. 32
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

* = refer to *Notes on sources of survey data*, p. 32
 All ages: relates to ages reported; as given in original source
 % Total sales: Adjustment factor used, estimated % of total sales
 of M = manufactured or T = total cigarette consumption implied by survey, sexes combined
 -- = adjusted by original author

Table 7F Number of cigarettes smoked per person per day, sales-adjusted, females: selected surveys¹ by age; with percentage total sales

Year	Source	Product	Age Groups																		All ages	% Total sales				
			12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60	65			70	75	80+	
97	2	UC																						3.5		65% ^m
01	9	UC*								6.0			8.9		8.1		5.0		1.6		*	*	*	4.8		50% ^m
05	7	TC								7.0			9.8		8.9						1.1			5.9		43% ^m
06	7	TC								7.0			8.8		5.7						1.3			5.0		50% ^m
08	10	TC*								4.0			7.1		8.6		6.1		2.4		0.8	*	*	4.5		63% ^m
09	7	TC								5.6			8.5		7.0						1.5			5.0		73% ^m
10	11	TC													5.3											96% ^m
12	7	TC								4.4			6.5		6.3						1.4			4.1		92% ^m

1 Based on those surveys in Table 6 with data for both sexes and age range at least 21-64 (see *Cigarette consumption per person*, Methods p. 11).

Source: See *Notes on sources of survey data*, p. 32
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

* = refer to *Notes on sources of survey data*, p. 32
 All ages: relates to ages reported; as given in original source
 % Total sales: Adjustment factor used, estimated % of total sales
 of M = manufactured or T = total cigarette consumption implied by survey, sexes combined
 -- = adjusted by original author

Table 8 Estimated¹ prevalence of smoking and estimated¹ number of cigarettes per person per day (unadjusted and sales-adjusted): summary of Tables 4, 6 and 7. Males and females aged 15 years and over

Year	Source ²	Product ³	Prevalence ⁴						Number of cigarettes					
			Manufactured cigarettes		Total cigarettes ⁵		All products ⁶		Unadjusted ⁷			Sales-adjusted ⁸		
			M	F	M	F	M	F	Number/ person/day	Total sales %	Manufactured cigarettes number/ person/day	Total cigarettes ⁹ number/ person/day	M	F
1989	1	U					49	17				(8.5	2.4)	
1996	3	<i>U</i>					49	47				(8.6	6.6)	
1997	2	UC			40	19			7.4	2.3	65	11.4	3.6	
2001	9	UC+U					42	23	5.5	2.4	50	11.0	4.8	
	9	U					51	30						
2002	7	<i>U</i>					53	27				(12.9	5.2)	
2005	7	MC+TC+A	37	24	38	24	38	24	5.7	2.5	43	13.2	5.9	
	7	<i>MC +TC +A</i>	43	32	43	32	44	32						
2006	7	MC+TC+A	40	25	40	25	40	25	5.8	2.5	50	11.5	5.0	
	7	<i>MC +TC +A</i>	42	30	42	30	42	30						
2008	10	TC			40	19			8.6	2.8	63	13.5	4.5	
2009	7	MC+TC	47	29	48	29			8.6	3.6	73	11.9	5.0	
	7	MC+TC+A	49	30	48	29	49	30						
2010	11	TC			44	36			7.7	5.1	96	7.9	5.3	
	11	TC			45	36								
2012	7	MC+TC+A	39	29	41	30	41	29	7.1	3.7	92	7.7	4.0	
	7	MC+TC+A	41	30	42	30	42	30						

1 Surveys covering an age range of at least 21-64 are included. Any gaps in the data for ages 15-20 and 65 years and over are filled in by assumed extensions to the age distribution, shown in the extended versions of Tables 4 and 6 in the Excel tables workbook. Method: see *Summary of adult smoking*, Methods p. 13. Exceptionally, calculation is based on the *All ages* value from Tables 4, 6 and 7 in those surveys for which some age-specific data are not available (age groups marked as * in Tables 4, 6 and 7)

2 See *Notes on sources of survey data*, p. 32.

3 Product: MC = manufactured cigarettes, TC = total cigarettes (including hand-rolled), UC = cigarettes (type unspecified), A = all products, U = unspecified. Frequency of smoking is indicated by: regular or daily smokers in normal type, **all smokers (including occasional) in bold**, *unspecified in italics*.

4 Estimated from data in Table 4 (see also extended version of Table 4 in the Excel tables workbook)

5 This column includes prevalence of smoking classified as UC = cigarettes (type unspecified).

6 This column includes prevalence of smoking classified as U = unspecified product.

7 Estimated from data in Table 6 (see also extended version of Table 6 in the Excel tables workbook)

8 From Table 7, except data in parentheses, which are derived from the prevalence of smoking from Table 4 as described in *Summary of adult smoking*, Methods p. 13.

9 As no estimates of hand-rolled cigarettes are available, all sales-adjustment is to manufactured cigarettes.

Figure 3 Estimated prevalence of smoking of (i) manufactured cigarettes, (ii) total cigarettes and (iii) all tobacco products; by year of survey. Males and females aged 15 years and over

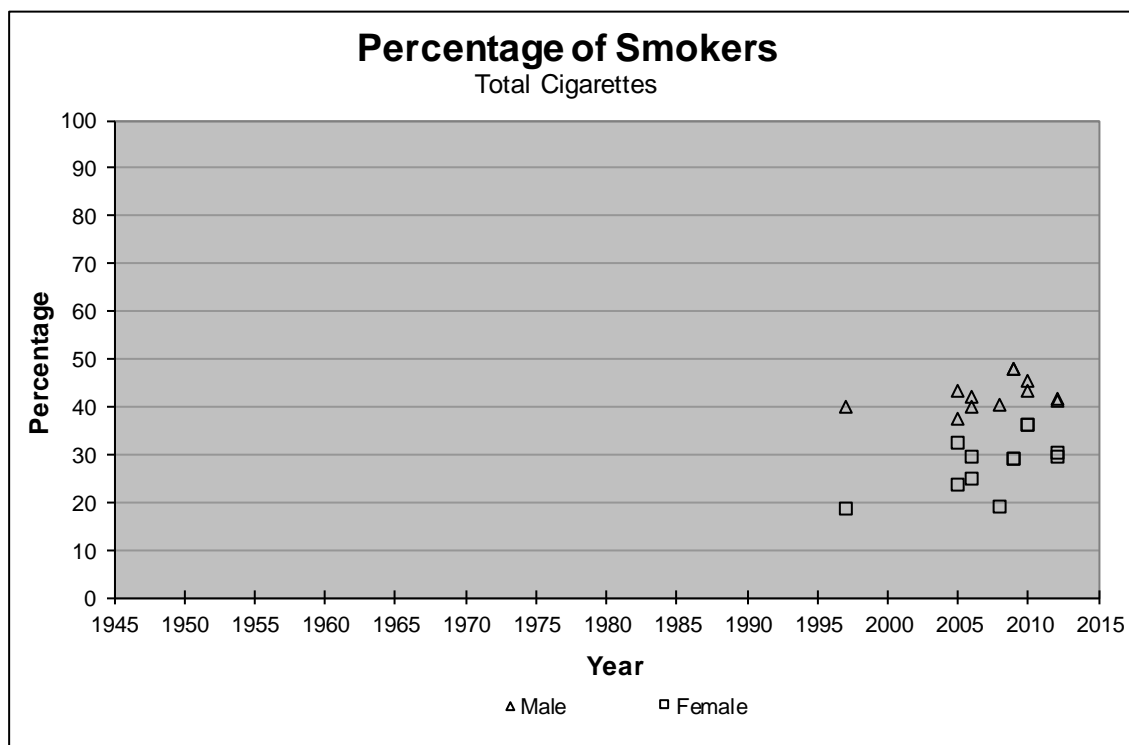
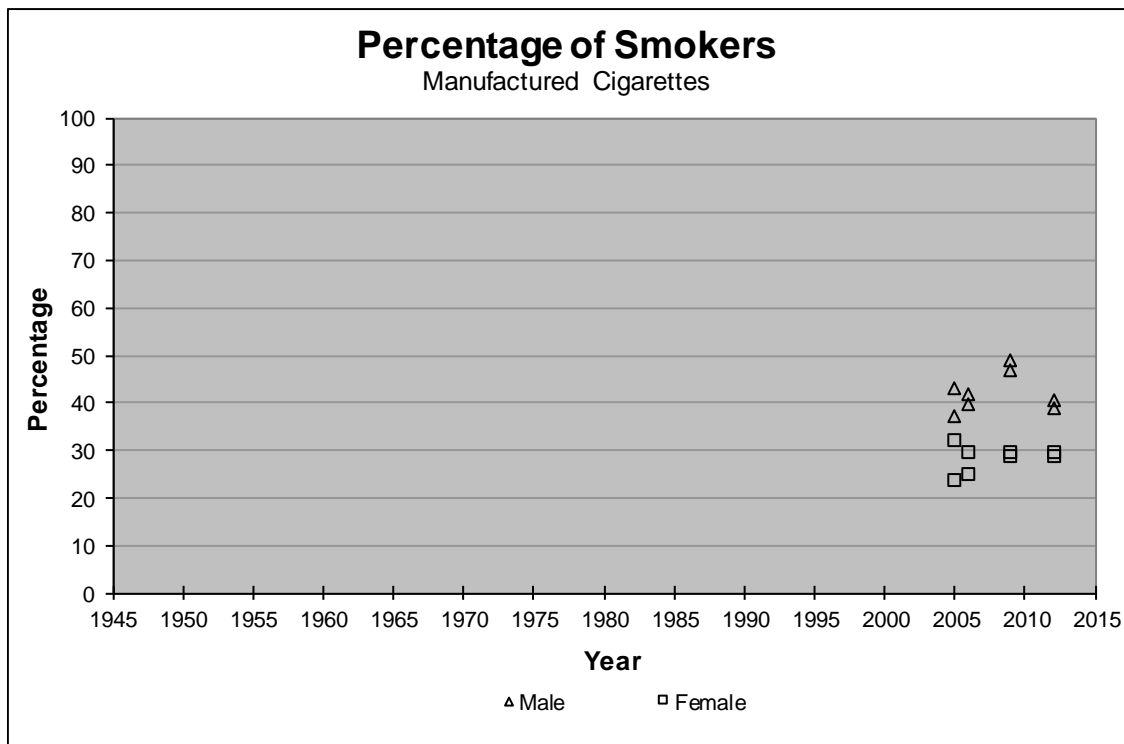
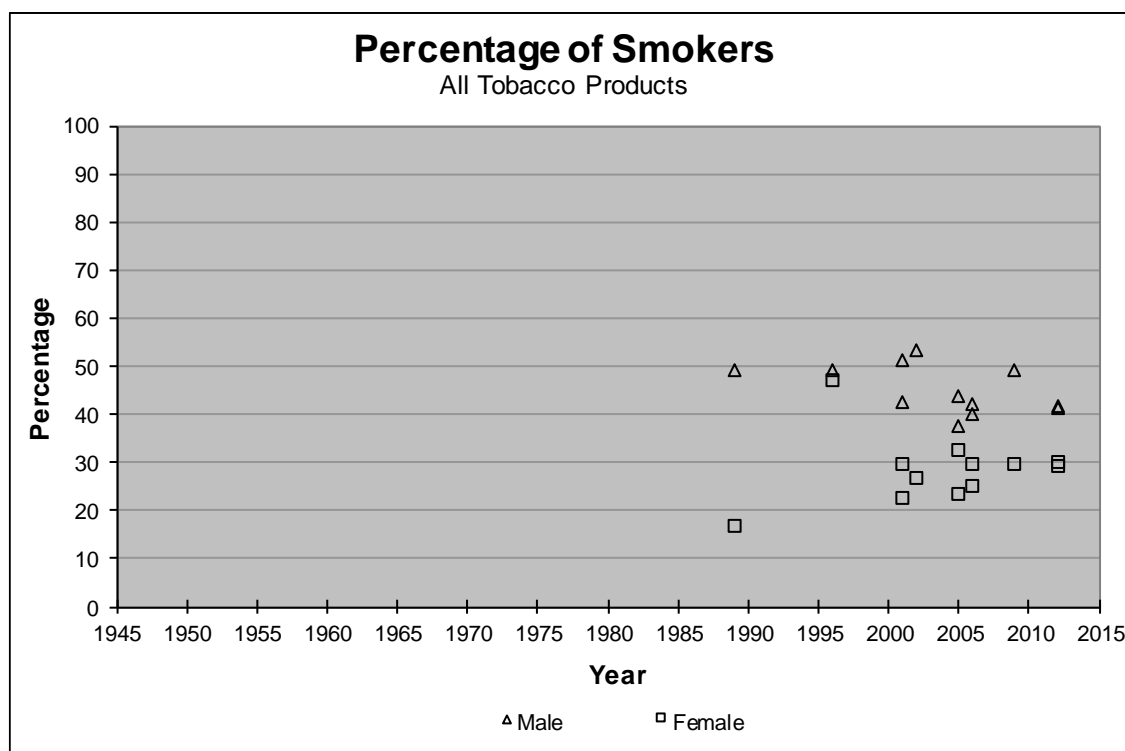
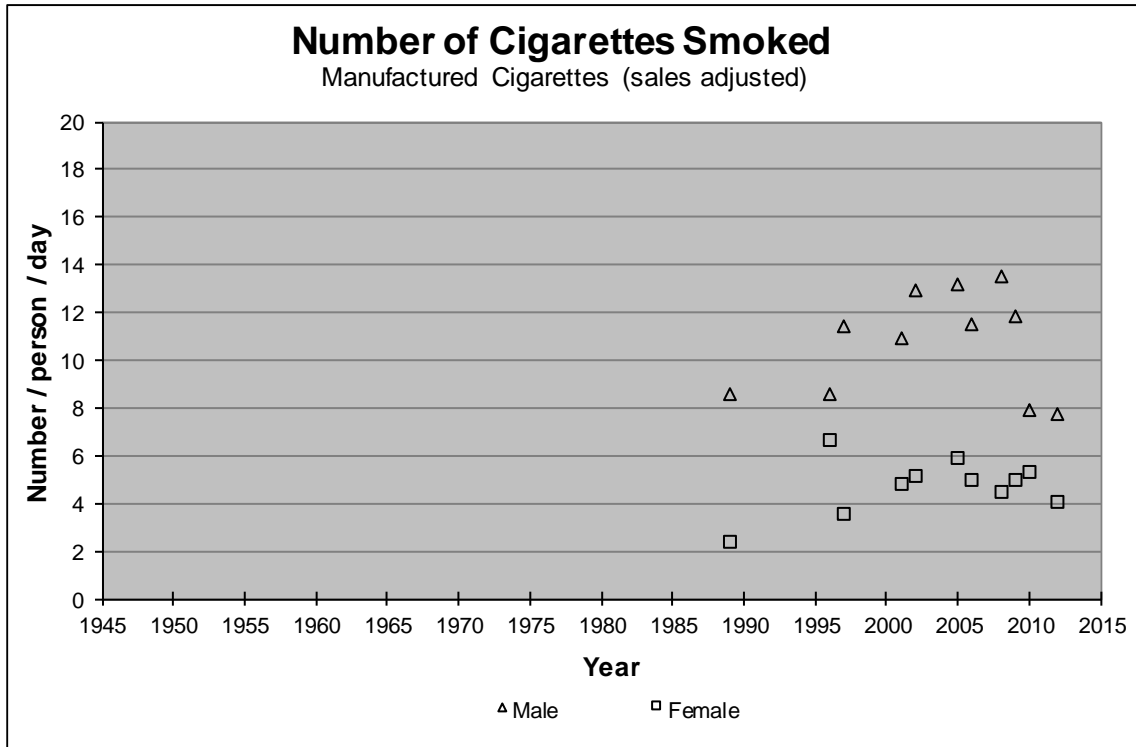


Figure 3 (continued)



Source: Table 8.
See also customisable version of Figure 3 in the Excel workbook.

Figure 4 Estimated number of manufactured cigarettes smoked per person per day, sales-adjusted; by year of survey. Males and females aged 15 years and over



Source: Table 8.

Notes

Notes on sources of sales data

The data presented in the tables and figures were obtained from several sources, details of which are given below, together with estimations and related assumptions. Full citations of the sources are given on p. 35 under *References*.

Consumption data 1913-1935

Hutson (1937)

See Table 1.1

Data were originally given to the nearest 1 000 pounds. They have been converted to tonnes (1 000 lbs = 0.45359 tonnes) and given to the nearest tonne. For conversion from weights to numbers we assumed an average cigarette weight of 1 g.

Cigarette tobacco, initially included with smoking mixtures was, subsequent to 1923, included with cigarettes. The change of categories suggests that, around 1922-23, 1 000 to 1 500 tonnes of cigarette tobacco were smoked. No consumption of cigars was reported. Consumption of snuff was reported as less than 500 lbs (0.2 tonnes) in 1934.

Hutson noted that actual consumption may have exceeded the figures given, since production was not entirely controlled, and home-grown tobacco may have been used in “considerable quantities”, avoiding excise tax.

Sales and consumption data for 1960 onwards

Manufactured cigarettes: As there are considerable discrepancies between data from different sources, Table 1.2 shows alternatives from several sources, detailed below. The data marked † are also shown in Table 2 and Figure 2, with the data marked ‡ also shown as alternative in Figure 2.

Legal Sales:

2004-2010: Euromonitor International (2010, 2011) quoted by Skafida *et al* (2014)
Based on official statistics, industry data and Euromonitor’s own estimates.

2006-2010: KPMG (2012)

Shown in Table 1.2 as KPMG(1). Legal domestic sales, based on government data for tax stamps. KPMG noted that this data series was distorted by high levels of inventory built up prior to price increases in 2008, 2009 and 2010.

2007-2014: KPMG (2015)

Shown in Table 1.2 as KPMG(2). Legal domestic sales estimated by Philip Morris International (PMI), based on AC Nielsen Retail Audit data and EU, ERC and Excise Tax yearly data.

Consumption:

† 1960-2004: US Department of Agriculture (USDA) (2005)
Domestic consumption.

1970-2000: World Health Organization (2013)
Consumption.

‡ 1999-2013: National Statistical Institute (NSI) (2014, 2016)

Consumption data derived from a quarterly representative survey of a random sample of 3 060 households by NSI, in a context of household expenditure and food consumption. Data were given as annual per capita, from which we have calculated totals.

2004-2010: Euromonitor International (2010, 2011) quoted by Skafida *et al* (2014)
Legal sales (as above) plus illicit trade.

† 2007-2014: KPMG (2015)

Estimated total consumption, i.e. adjusting for estimated legal cross-border purchases, and including estimated counterfeit and contraband.

Cigars 2007-2011: Bundesverband der Zigarrenindustrie (2013)

Little information is available on the use of products other than cigarettes. Euromonitor International (2015b, 2015a) reported that cigars had been difficult to obtain in the mid-20th century, and that pipe smoking had consequently been taken up by middle class “connoisseurs”, a habit still maintained by a few. In 1995, USDA (1995) noted that, traditionally, tobacco was used primarily for cigarette production with very little processed for snuff or chewing tobacco. Later, they noted that 45 cigar and 3 loose tobacco brands were included in the official price lists for the first time in 1996, increasing to 100 cigar brands and 13 loose tobacco brands in 1999 (USDA (1996b, 1999)). Tobacco for oral use was banned in 2004 (Bulgarian News Agency (2004)).

Euromonitor International (2008b) reported increasing usage of roll-your-own (RYO) in 2007, in response to price increases and poor quality tobacco in manufactured cigarettes, and the banning of unfiltered cigarettes. They also noted that in the same year cigars achieved a small but significant share of the overall market, but that they remained a luxury rather than everyday product (Euromonitor International (2015a)). KPMG listed Bulgaria among a group of countries where products other than cigarettes had accounted for less than 5% of total legal tobacco sales in 2008 and where no robust source of data was available for the years since. They also noted that significant quantities of green leaf tobacco are consumed in Bulgaria, which are not captured in estimates of legal domestic consumption.

Given the lack of data on other products, we have not made estimates of total tobacco consumption, but (relying on the standard assumption of 1 g of tobacco per manufactured cigarettes) it can be assumed to have been very close to manufactured cigarette consumption during the second half of the 20th century. This is supported by the following figures for sales of tobacco products which were given by World Health Organization (1975):

Year	Tonnes
1970	12 420
1971	12 608
1972	13 378
1973	14 220
1974	14 180

The Bulgarian state monopoly Bulgartabac was established in 1947, and Bulgaria was a major regional producer and exporter of cigarettes to Eastern Europe and the USSR. Imports traditionally constituted only a tiny proportion of the market. In the 1990s, production was hit by a severe financial downturn, and loss of markets in the former Soviet Union (Bozicevic *et al* (2004)). Despite some market liberalisation, domestic prices were government controlled until 2006 (Sofia News Agency (2006)), and Bulgartabac continued to hold a large market share, e.g. estimated as 96.5% of the legal domestic market (Bozicevic *et al* (2004)), but falling to around 60% by 2009 after Bulgaria joined the EU in 2007 (News.bg (2008), SeeNews (2009)). After many years of delays, Bulgartabac was privatized in 2011 (Bulgarian News Agency (2011)).

Estimates of smuggling and cross border sales

Smuggling and illegal trade were reported to be major problems from the mid-1990s (e.g. USDA (1995, 1996a, 1997a, 1997b)). In 1994, only one company was registered as an importer, leading to the assumption that 95% of imports were illegal. Despite the introduction of excise labels some two years previously, 80% of foreign cigarettes were still being sold without such labels. USDA reported some reduction in smuggling in 1998 (USDA (1999)), but others continued to estimate that a very high proportion of imports were illegal e.g. over 90% in 1999 by Center for the Study of Democracy (CSD) (2003), and 86% by Bulgarian Press Digest (2000). USDA reported another increase in 2002 following increases in excise duties, but the level had dropped to around 66% according to a 2007 estimate (Sofia Echo Com (2007)).

The Table below summarises estimates of the market share (%) of non-legal sales of cigarettes as a proportion of total cigarette sales for the whole country. The sources of the estimates, and their basis (if available), are described below the table.

	Source										
	1	2	3	4	5	6	7	8	9	10	11
1995	15	38									
2001			38								
2000-04			25-49.9								
2006			12	10-15							
2007				22.8	11.1	14.0 (Q3)					
2008				30-40	12.9	14.0 (Q2)	7	15	>15		
2009				a third	16.5	17.6 (Q2)			27	47	
2010			34	~30	30.7	34.1 (Q2), 21.3 (Q4)		35	39.7	30-40	40
2011				~40	20.2	22.0 (Q2), 19.0 (Q4)		40		20	25-30
2012					15.5	15.3 (Q2), 18.0 (Q4)					
2013					18.2	18.8 (Q2), 19.8 (Q4)					
2014					18.5	21					
2015								13.4			

Sources:

- Merriman *et al* (2000) quoting World Tobacco File (1994). Smuggling, as % of sales.
- Joossens and Raw (1998). Illegal imports, as % of total consumption.
- ERC. 2000-2004: ERC (2004) quoted by Mackay *et al* (2006). Bulgaria was shown as in a category of 25-49.9% but no detail given.
Other years: ERC Group PLC (2001, 2007, 2010) quoted by Bozicevic *et al* (2004), Shafey *et al* (2009), Eriksen *et al* (2012) respectively. Smuggled cigarettes, as % of total sales.
- Bulgartabac quoted by Sofia Echo (2006), Loubeau (2012), Sofia News Agency (2009), SeeNews Digest (2010), Bulgarian News Agency (2010a), KPMG (2011). For 2009, a figure of 15% referring to January was also given. The figure for 2011 was described as a preliminary estimate issued in June referring to Jan-May. The 2007 and 2009 results were described by KPMG (2011) as an Empty Pack Survey (EPS) by Bulgartabac, with “illegal cigarettes” defined in 2009 as cigarette packs without a tax sticker, those with a foreign tax sticker or those with a Duty Free label.
- KPMG (2014, 2015). The share of total cigarette consumption that is counterfeit or contraband, based on KPMG’s EU Flow Model, manufacturers’ data, Synovate/Ipsos non-domestic (legal) research, independent agency EPS, Bulgarian Customs Agency data and national visitor number statistics.
- KPMG (2014, 2015). Non-domestic cigarettes, based on an EPS for PMI by Nielsen. The survey collected 10 000 - 13 000 packs per year from at least 14 towns and cities, with results weighted by population. “Q” = quarter. For the early years, results were provided on a basis of numbers of packs (as shown in the table above up to 2011) and subsequently on a basis of numbers of cigarettes; alternative results for 2011 on the cigarette basis were somewhat higher (23.3% (Q2), 25.0% (Q4)) (KPMG (2012)). The non-domestic percentage varied by region, for instance it exceeded 35% in 7 of 21 regions reported in 2014, and was 5% or less in 5 regions. CSD (2012) reported the same data as shown in the table for 2007-2010 as referring to cities only; an estimate for 2010 additionally including towns and border areas was 43.4%. They also reported the definition of non-domestic as packs without excise stamps and paid VAT. Data for 2014 are not available by survey wave.
- Bulgarian News Agency (2008) quoting BAT. Contraband cigarettes as % of sales, based on market research.
- Other results attributed to Industry research.
2008: News.bg (2008) quoting BTA (Association of producers and traders). Illegal cigarettes as % of total market, based on MBMD research, sample size 4 908 adults. The BTA also reported 50%-70% in border areas in 2008-2009 (Bulgarian News Agency (2010c)).
2010-2011: Gilmore *et al* (2014) quoting industry sources.
2015: FOCUS News Agency (2015), based on market research by five tobacco companies. Illegal cigarettes.
- Gilmore *et al* (2014), Rowe (2008) quoting Euromonitor International (2010, 2013). Illicit cigarette trade volume as % total volume. Gilmore *et al* (2014) noted that concerns have been raised by Skafida *et al* (2014) and Blecher *et al* (2015) about the quality of Euromonitor data on illicit trade.
- Customs Agency, quoted by Bulgarian News Agency (2010b), Sofia Echo (2011), Agence France Presse (2011), Sofia News Agency (2012). Various descriptions: “grey sector”, “shadow cigarette market”, “contraband”, or “illegal sales as % of cigarette market”.

11 CSD (2012). Illegal cigarettes as share of all tobacco products, based on “alternative [to the EPS] assessments which take into account some of the drawbacks of the empty pack methodology”.

KPMG reported that a large proportion of illicit cigarettes were “illicit whites” (defined as brands manufactured legally, usually outside the EU, and smuggled into another market where they have limited or no legal distribution and are sold without payment of tax). For instance, they estimated that in Bulgaria in 2013 some 1.64 billion (11.9% of all cigarettes consumed) were illicit whites (KPMG (2014)).

Some Eurobarometer surveys enquired about contact with smuggled cigarettes and cross border purchasing. In 2008, 10.4% of Bulgarian respondents had, in the previous 6 months, often seen cigarettes being sold that they thought were smuggled, with a further 10.8% seeing them occasionally (Gallup Organisation Hungary (2009)). In 2012, 6% reported having purchased tobacco products abroad in the previous year (European Commission (2012)).

A multinational survey in 2010 by PPACTE was reported by Gallus *et al* (2012) and Joossens *et al* (2014). The Bulgarian sample size was 1 027, of which 420 were current smokers who reported their sources of cigarettes bought in the previous 30 days (as percentages of the total number bought), summarised as follows:

Source	Proportion of cigarettes bought (%)	
	Smokers aged 15-24	All smokers
Legal shops	77.1	78.1
Vending machines	0.0	0.0
Internet	0.0	0.0
Other countries/duty free	2.2	1.7
Smuggled (markets, door-to-door sellers etc.)	13.5	12.2
Offered by peers	7.3	7.9

20.3% of current smokers reported having bought smuggled cigarettes (more than 1% of their total purchasing) in the previous 30 days. Participants were asked to show their most recently bought pack. 18.3% of packs were identified as illicit (defined as purchased from an illicit source or at an extremely low price, or lacking the appropriate health warning or tax stamp).

Data from KPMG (2014) show that legal non-domestic sales, i.e. cross-border and duty-free sales, made up only around 1% of total sales during 2007-2013.

Estimates of numbers of hand-rolled cigarettes

Hand-rolled cigarette consumption is included with manufactured cigarettes for 1924-1935 (Table 1.1, and *Consumption data 1913-1935*, p. 28). It is assumed to have been negligible in the second half of the 20th century, but was reported to have increased around 2007 (Euromonitor International (2008a)), although no specific estimates are available. In the PPACTE survey of 2010 (see previous section for methodology), only 3 of 420 (<1%) current smokers who showed their most recently bought pack showed a hand-rolling pack.

Plain/Filter cigarette sales

1966-1979: Maxwell (Successive years)

1980-2004: USDA (2005)

See Table 3

From 1980 the data represent percentage of production rather than of sales. Around 1993, the decline in real incomes of smokers forced cigarette factories to change their marketing policy and to increase production of less expensive brands and non-filter cigarettes (USDA (1997a)).

Unfiltered cigarettes were subsequently banned (Euromonitor International (2008a)).

Menthol cigarette sales

Around 1999-2001, menthol cigarettes accounted for 1.9% of the total cigarette market (Giovino *et al* (2004) quoting ERC Group PLC (1999, 2001)), but by 2010 market share had dropped to 0.3% (Oxford Economics (2012)) and was estimated at <1% in 2012 (KPMG (2013)).

Slim cigarette sales

In 2012, slim cigarettes made up 36% of total cigarette sales (KPMG (2013)).

Tar, nicotine and CO machine yields of cigarettes

No data on sales-weighted machine yields are available.

In 1993, average tar yield was reported to be 16 mg per cigarette, based on an analysis of the eight most commonly sold brands, tested by the Russian Institute of Carcinogenesis (RIC) according to ISO standards (Zatoński and Przewoźniak (2010)). Based on a personal communication by P. Dimitrov, they also reported an average tar yield of 8.1 mg for 2005, based on testing at a national laboratory according to ISO standards, although the brands tested were not stated.

The tar yield per cigarette was limited to 20 mg during the 1990s, and to 15 mg from 2001 (Harkin *et al* (1997)). On joining the EU in 2007, Bulgaria was granted a derogation until 2011 of the Tobacco Product Regulation Directive 2001/37/EC, limiting the yield per cigarette of tar to 10 mg, of nicotine to 1 mg and of CO to 10 mg (McKee *et al* (2010)).

Notes on sources of survey data

Each source of survey data—either an individual survey or a series of surveys repeated over a number of years—is cited by a source number. This number is shown in the tables and corresponds to the source numbers given below, where details of the source publication and of the survey methodology are given. Full citations of the sources are given on p. 35 under *References*.

As mentioned in the preface, the survey data in this chapter are largely reproduced from the 2nd (print) edition, which covered the years up to 1995, subject to a few amendments for consistency with the Web edition. For the subsequent years, only certain multinational surveys have been added (sources 5-11). No searches for country-specific sources or surveys were undertaken.

Source number

- 1 World Health Organization (1997)**
 - a. Overall age group not stated (adults); age-specific data are not available for the age groups marked *.
 - b. Representativeness not stated. Balabanova *et al* (1998) state that in their study (see source 2) results from major cities only were similar to this study.
- 2 Balabanova *et al* (1998)**
 - a. Household survey, representative of general population (although ethnic minorities may have been under-represented). Sample size 1 550, response rate at least 70%.
 - b. Consumption category estimation based on 1-9, 10-19, 20-29, 30-39 and 40+ cigarettes per day, taken from graph
 - c. Assumed extensions to age distribution for percentage smokers and for cigarettes/person/day are shown in the extended versions of Tables 4 and 6 respectively in the Excel tables workbook.
- 3 USDA Economic Research Service (1996)**
 - a. Unofficial data. Age group not stated.
- 4 USDA Economic Research Service (1996)**
 - a. Unofficial data. Age group not stated (teenagers). Year not stated.
- 5 Currie *et al* (2008), Inchley *et al* (2016)**
 - a. Part of the HBSC (Health Behaviour in School-Aged Children) Study, a collaborative cross-national research study sponsored by the WHO. School classes or schools were randomly selected, targeting age groups 11 (not presented here), 13 and 15. The target sample size in each age group was 1 000 – 1 500.

Year	Mean age		Sample size	
	Target age 13	Target age 15	Target age 13	Target age 15
2006	13.6	15.6	1 580	1 688
2014	13.7	15.7	1 554	1 650

- b. Bulgaria also participated in the 2009-2010 wave of the survey, but results are not available from the international report as results were not submitted until after its deadline (Currie *et al* (2012)).
- c. Smokers marked as frequency *: smoked daily. Regular smokers: smoked once a week or more. All smokers: includes those smoking less than once a week.

6 Hibell *et al* (2000, 2004, 2009, 2012)

- a. Nationally representative survey forming part of ESPAD (European School Survey Project on Alcohol and Other Drugs). Survey of pupils in grades 9-10 of secondary schools and grades 1-2 of technical and vocational schools, selecting those born within a target year, thus age 15-16 at the time of the survey. At least 72% of 15-16 year-olds were still in school in each survey year, with at least 88% in the surveyed grade. Anonymous questionnaire completed and sealed in an envelope by the pupil, in class. Teachers not present.

Date	Sample size		Participation rate (%)			Target year of birth	Average age
	Males	Females	Schools	Classes	Pupils		
May 1999	2 434	2 957	100	100	87	1983	15.4*
May 2003	1 291	1 208	100	–	85	1987	15.9
Jun 2007	1 203	1 150	–	100	86	1991	15.9
Apr 2011	1 132	1 085	100	100	82	1995	15.8

* as given by Hibell *et al* (2000), although the 2004 report said that ages as given in the 2000 report were systematically 0.5 years too low.

- b. Smokers marked as frequency *: smoked 1 or more cigarettes per day in the previous 30 days. All smokers: smoked at least one cigarette in the previous 30 days.
- c. Consumption category estimation based on 1-5, 6-10, 11-20, 21+ cigarettes/smoker/day.

7 Mohedano-Brethes and Soufflot de Magny (2005), Christensen (2008), Papacostas (2009, 2012), European Commission: TNS Social and Opinion (2014)

- a. Eurobarometer Surveys commissioned by the European Commission to monitor public opinion in the European Union (EU). Some Eurobarometer surveys include questions on smoking habits. Sample size approximately 1 000.
- b. These surveys provide results that are comparable across countries. However, they have been criticised for having small sample sizes and for generating “estimates that are in some cases widely discrepant from more substantive national sources” (Bogdanovica *et al* (2011)).
- c. In 2002 (Candidate Country Eurobarometer), the sample consisted of citizens of the country, and thereafter the sample consisted of people aged 15 and over who were resident in the country and had the nationality of any of the EU member states.
- d. Frequency U (in Table 4) represents positive answers to questions such as “Do you smoke cigarettes?” or “You smoke packeted cigarettes”. From 2005-2006 an additional question made it possible to identify regular smokers also; our estimates of regular cigarette smoking assume that the proportion smoking regularly applies equally to smokers of each product, which may cause anomalies. From 2009 the questionnaire format clearly asked about regular and occasional smoking and so frequency codes R and A are used.
- e. In 2012, questions on what product or amount “do/did you smoke” were put to both current and ex smokers, and our estimates of prevalence for products TC and MC (Table 4), and of cigarettes per smoker (Table 5), assume that responses by current smokers relate to their smoking habits at the time, rather than throughout their lives.
- f. Consumption category estimation based on <5, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39 and 40+ cigarettes/smoker/day. Exact values for cigarettes/smoker/day are available for 2009 (see also Appendix III) and 2012.

8 Centers for Disease Control and Prevention (CDC) (2016), Warren *et al* (2008)

- a. Global Youth Tobacco Survey (GYTS). National school-based surveys targeting ages 13-15, using standardised data collection procedures. We show results restricted to 13-15 year olds where available, although it is not always clear from the original sources whether the whole sample or only ages 13-15 are included.

	Response rate (%)				Sample size (age 13-15)
	Schools	Classes	Students	Overall	
2002	100	100	91	91	1 763
2008	100	100	87	87	3 241

- b. All smokers: smoked on at least one day in the last 30 days. Prevalence for product A* refers to current users of any tobacco product (i.e. may include smokeless tobacco users).
- c. It was also reported that, in 2002, 5.9% of boys and 3.6% of girls used tobacco products other than cigarettes. In 2008, the %s were 10.5% of boys, and 6.8% of girls.

9 Eurostat (2007)

- a. Surveys collated by Eurostat as the 2004 round of data collection on Health Interview Surveys. In Bulgaria, the Survey of the Health Status of the Population. National household survey, including permanent residents of workers' and students' hostels. Target sample 3 810 households, 10 122 persons. Response rate 93%. Achieved sample 8 008 persons aged 15+.
- b. The *All ages* values refer to ages 15+; age-specific data are not available for the age groups marked *. The highest age groups shown are 75-84 and 85+.
- c. Consumption category estimation based on two categories, 1-19 and 20+ cigarettes/cigarette smoker/day, and resulting figures should be regarded with caution.
- d. Calculation of cigarettes per person based on percentage smokers (product unspecified), and number of cigarettes per cigarette smoker, so may overestimate.

10 Eurostat (2013)

- a. European Health Interview Surveys, coordinated by EUROSTAT, Wave 1. The Bulgarian arm of the survey was conducted in Oct-Nov 2008. Individuals living in private households. Smoking behaviour was obtained through self-completion questionnaires. Sample size 5 661, response rate 74%, 9% proxy respondents.
- b. The *All ages* values refer to ages 15+; age-specific data are not available for the age groups marked *. The highest age groups shown are 75-84 and 85+.
- c. Regular cigarette smoker: smoked manufactured or hand-rolled cigarettes daily.
- d. Consumption category estimation based on two categories, 1-19 and 20+ cigarettes/smoker/day, and resulting figures should be regarded with caution.

11 Gallus *et al* (2012, 2014)

- a. Surveys by PPACTE in 2010 in 18 European countries. Coordinated by DOXA, the Italian branch of the GALLUP International Association. Face-to-face interviews using computer-assisted personal interviewing. The survey in Bulgaria used stratified random sampling. Age range 15+. Sample size 1 027, response rate 74%.
- b. One section of the survey involved asking to see the subject's most recently bought pack of cigarettes or hand-rolling tobacco. Among smokers (sexes combined), the type of pack bought most recently was:

Pack type	Proportion (%)
Cigarettes, 20-pack	92.4
Cigarettes, 10-pack	6.9
Hand-rolling tobacco	0.7
Other	0.0

- c. Among current cigarette smokers, 98% smoked only factory made cigarettes, 1% smoked only roll-your-own, and 1% smoked both types.
- d. No use of smokeless tobacco was reported.
- e. Cigarettes per smoker relates to all smokers rather than regular smokers.

Additional information (not presented in tables)

Zatonski (1991) stated that the prevalence of smoking was 28% (sexes combined) in 1987, which represented a considerable decline since 1980.

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