
International Smoking Statistics

Web Edition

A collection of worldwide historical data

Portugal

Barbara Forey, Jan Hamling,
John Hamling, Alison Thornton, Peter Lee

P N Lee Statistics & Computing Ltd
17 Cedar Road
Sutton SM2 5DA, UK
www.pnlee.co.uk

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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.

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].

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

Sales data

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

Sales data are available for 1934 then yearly from 1940, but data since 1974 are incomplete and from various sources.

In 1934 most tobacco was used in forms other than manufactured cigarettes. Loose tobacco (mainly for hand-rolling but also for pipes) made up 67% of the market by weight, and cigars and cigarillos made up a further 9%. Over the following 60 years use of manufactured cigarettes increased steadily, from an average of less than half a cigarette per adult per day in 1934 to almost 6 per adult per day in 1994. By that time manufactured cigarettes made up over 98% of the tobacco market and smoking of loose tobacco and cigars had virtually disappeared. Since then manufactured cigarette smoking has reduced steadily, to about 3 cigarettes per adult per day in 2012. Use of loose tobacco in hand-rolled cigarettes has increased slightly, to half a cigarette per adult, and cigar and cigarillo smoking has also increased. However, in 2010 manufactured cigarettes still made up over 88% of the market.

Use of filtered, rather than plain, cigarettes increased rapidly during the 1960s and 1970s from less than 20% of manufactured cigarettes to over 80%. Filter cigarette use then increased still further, making up over 97% of manufactured cigarettes in 2004.

Cigarette smuggling is a much smaller problem in Portugal than in many other European countries. Estimates vary, but mostly range between 2% and 6% of the total cigarette market. Unusually for a western European country, estimates for 2006 to 2013 show more cigarettes leaving the market (to other countries) than were brought in as counterfeit, contraband or legal cross-border sales.

Survey data

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

No survey data on smoking habits are available until the mid-1970s. The prevalence of smoking among men aged 15 years and over was then between 40% and 50%. This decreased gradually to around 20-30% by 2010. Among women estimates varied considerably but have generally risen, from under 5% in the 1970s to around 10-20% in the 2010s. Cigarettes were the predominant product used: there is little difference for men, and no difference for women, between the reported prevalence of smoking cigarettes and of smoking any product.

Data on adult smoking by age are available mainly from National Health, Eurobarometer and European Community Household Panel Surveys. More men than women smoked at all ages, and very few women aged over 50 smoked (although the PPACTE survey* conflicts with this). Among women, prevalence of smoking was highest among those aged 15-24 until the mid-1990s; thereafter prevalence peaked in the 25-39 age group. Among men, peak prevalence was in the age group 25-39 until the mid-2000s; thereafter it peaked in the 40-54 age group.

Data on smoking by teenagers are not available until 1990. Most surveys showed that the prevalence of smoking was very similar between boys and girls in their early teens. Prevalence was higher in later teens for both sexes but slightly more so among boys than girls. There is little evidence that prevalence among teenagers has changed over time.

Comparison of sales data with data from National Health and European Community Household Panel Surveys (1987 onwards) shows that consumption was under-reported by 32-39%; the Eurobarometer surveys generally under-reported somewhat less, but with greater variability (1-34%), while the PPACTE survey* over-reported consumption by 48%. Between 1987 and 2009 the estimated number of cigarettes smoked per person per day (sales-adjusted) fell for men, from 10 to around 6; but rose for women from 1 to over 2.

* The PPACTE survey (source 28) reports smoking prevalence values that are somewhat out of line with the other sources: the reported high prevalence of smoking among women aged over 50, and the finding that the consumption implied by this survey exceeds national sales figures are examples of this.

Table 1.1 Total annual sales of tobacco products, 1934-1972

Year	Manufactured cigarettes		Cigars and cigarillos		Pipe and hand-rolling tobacco tonnes	Snuff tonnes	All tobacco products tonnes
	tonnes	millions	tonnes	millions			
1934	650	650	253	119	1 831	30	2 765
1940	1 430	1 428	30	6	1 770	50	3 280
1941	1 720	1 716	30	6	1 910	50	3 700
1942	2 170	2 170	50	9	2 000	50	4 260
1943	2 250	2 251	50	10	1 910	50	4 260
1944	2 310	2 305	50	10	2 090	50	4 490
1945	2 410	2 411	40	7	2 180	50	4 670
1946	2 630	2 626	20	3	2 180	50	4 870
1947	3 160	3 161	10	2	1 770	50	4 990
1948	3 340	3 343	10	1	2 040	50	5 440
1949	3 570	3 573	10	2	1 630	50	5 260
1950	3 630	3 633	10	1	1 450	50	5 140
1951	3 800	3 802	10	1	1 450	50	5 300
1952	4 180	4 183	10	1	1 450	50	5 690
1953	4 220	4 215	10	1	1 320	50	5 580
1954	4 320	4 317	10	2	1 180	0	5 510
1955	4 670	4 674	10	2	1 090	0	5 770
1956	5 100	5 100	10	2	950	0	6 060
1957	5 090	5 088	10	2	820	50	5 960
1958	5 510	5 510	10	2	820	0	6 340
1959	5 780	5 778	10	2	770	0	6 560
1960	6 290	6 287	10	1	730	0	7 020
1961	5 570	5 570	10	1	680	0	6 260
1962	5 830	5 827	10	2	730	0	6 560
1963	6 760	6 757	10	1	730	0	7 490
1964	7 030	7 029	10	1	820	0	7 850
1965	7 480	7 482	10	1	540	0	8 030
1966	8 030	7 989	10	1	540	0	8 580
1967	8 260	8 237	10	2	500	0	8 770
1968	8 850	8 820	10	2	450	0	9 310
1969	8 690	8 689	10	1	450	0	9 150
1970	8 930	8 924	10	1	360	0	9 290
1971	9 080	9 082	10	1	360	0	9 450
1972	9 410	9 406	10	1	320	0	9 730

Source: see *Notes on sources of sales data: Sales data for 1934*, p36 and *Sales data for 1940-1972*, p. 36.

Table 1.2 Total annual sales of tobacco products, 1973-2012

Year	Manufactured cigarettes		Cigars and cigarillos		Hand-rolling tobacco tonnes	Pipe tobacco tonnes	All tobacco products tonnes
	tonnes	millions	tonnes	millions			
1973	10 203	10 203					
1974	11 052	11 052					
1975	12 043	12 043					
1976	11 834	11 834					
1977	12 564	12 564					
1978	12 537	12 537					
1979	11 986	11 986			184	14	12 184
1980	11 988	11 988			155	14	12 157
1981	12 606	12 606			144	12	12 762
1982	12 990	12 990			129	13	13 132
1983	13 635	13 635			131	15	13 781
1984	13 507	13 507			139	15	13 661
1985	13 594	13 594			137	15	13 746
1986	13 452	13 660					
1987	14 479	14 934					
1988	13 873	14 537					
1989	13 656	14 541	31	14	126		13 813
1990	14 308	15 486	32	15	123		14 463
1991	14 476	15 930	36	16	130		14 642
1992	14 921	16 700	37	17	139		15 097
1993	14 950	17 022	53	13			
1994	15 184	17 594	75	19			
1995	13 775	16 247	82	21			
1996	13 447	16 150					
1997	13 467	16 475					
1998	13 075	16 300					
1999	13 536	17 200	142	36			
2000	12 965	16 800	196	49			
2001	13 315	17 600	200	50			
2002	12 899	17 400	200	50			
2003	12 343	17 000	200	50	-	360	12 903
2004	11 729	16 500	204	51	-	323	12 256
2005	10 852	15 600	300	75	-	300	11 452
2006	9 751	14 330	292	73	-	233	10 276
2007	9 333	14 030	300	75	-	345	9 978
2008	8 112	12 480	288	72	-	450	8 850
2009	7 917	12 370	300	75	-	503	8 720
2010	7 472	11 860	300	75	-	653	8 425
2011	6 963	11 230	300	75	-	1 358	8 621
2012	6 179	10 130					

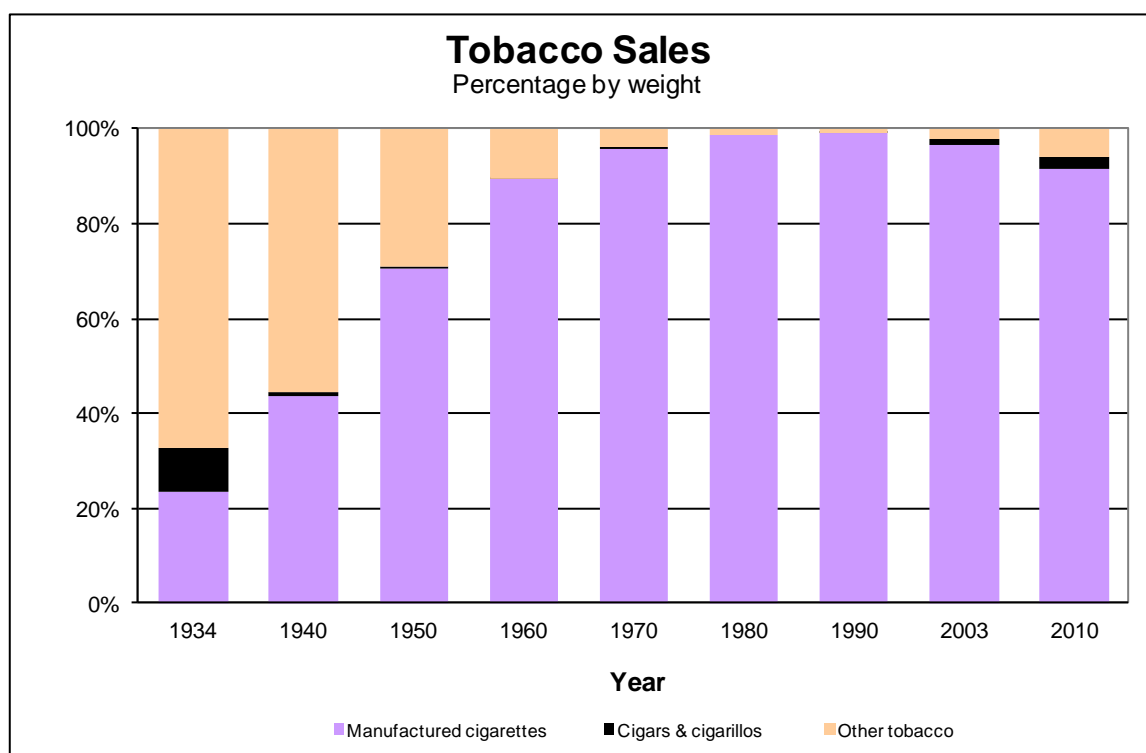
Source: see *Notes on sources of sales data: Sales data for 1973-1985*, p. 36 and *Sales data for 1986 onwards*, p. 37.

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

Year	Manufactured cigarettes %	Cigars & cigarillos %	Other tobacco %
1934	23.5	9.2	67.3
1940	43.6	0.9	55.5
1950	70.6	0.2	29.2
1960	89.6	0.1	10.4
1970	96.1	0.1	3.9
1980	98.6	0.0	1.4
1990	98.9	0.2	0.9
2003	95.7	1.6	2.8
2010	88.7	3.6	7.8

Source: calculated from Tables 1.1 & 1.2.

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



Source: Table 1.3.

Table 2 Sales of cigarettes (including estimated number of hand-rolled 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
1934	650	0.4					2 765	1.6
1940	1 428	0.7					3 280	1.7
1941	1 716	0.9					3 700	1.9
1942	2 170	1.1					4 260	2.2
1943	2 251	1.1					4 260	2.1
1944	2 305	1.1					4 490	2.2
1945	2 411	1.2					4 670	2.3
1946	2 626	1.3					4 870	2.3
1947	3 161	1.5					4 990	2.4
1948	3 343	1.6					5 440	2.6
1949	3 573	1.7					5 260	2.5
1950	3 633	1.7	1 852	0.9	5 485	2.5	5 140	2.4
1951	3 802	1.7	1 852	0.8	5 654	2.6	5 300	2.4
1952	4 183	1.9	1 852	0.8	6 035	2.7	5 690	2.6
1953	4 215	1.9	1 686	0.8	5 901	2.6	5 580	2.5
1954	4 317	1.9	1 507	0.7	5 824	2.6	5 510	2.4
1955	4 674	2.0	1 392	0.6	6 066	2.7	5 770	2.5
1956	5 100	2.2	1 213	0.5	6 313	2.7	6 060	2.6
1957	5 088	2.2	1 047	0.5	6 135	2.6	5 960	2.6
1958	5 510	2.4	1 047	0.5	6 557	2.8	6 340	2.7
1959	5 778	2.5	983	0.4	6 761	2.9	6 560	2.8
1960	6 287	2.7	932	0.4	7 219	3.1	7 020	3.1
1961	5 570	2.4	868	0.4	6 438	2.8	6 260	2.7
1962	5 827	2.5	932	0.4	6 759	2.9	6 560	2.8
1963	6 757	2.9	932	0.4	7 689	3.3	7 490	3.2
1964	7 029	3.0	1 047	0.4	8 076	3.4	7 850	3.3
1965	7 482	3.2	690	0.3	8 172	3.5	8 030	3.4
1966	7 989	3.4	690	0.3	8 679	3.7	8 580	3.6
1967	8 237	3.5	638	0.3	8 875	3.8	8 770	3.7
1968	8 820	3.7	575	0.2	9 395	4.0	9 310	3.9
1969	8 689	3.7	575	0.2	9 264	3.9	9 150	3.9
1970	8 924	4.0	460	0.2	9 384	4.2	9 290	4.1
1971	9 082	4.0	460	0.2	9 542	4.2	9 450	4.2
1972	9 406	4.2	409	0.2	9 815	4.4	9 730	4.3
1973	10 203	4.5						
1974	11 052	4.7						
1975	12 043	4.8						
1976	11 834	4.6						
1977	12 564	4.9						
1978	12 537	4.9						
1979	11 986	4.6	184	0.1	12 170	4.7	12 184	4.7
1980	11 988	4.5	155	0.1	12 143	4.5	12 157	4.5
1981	12 606	4.7	144	0.1	12 750	4.7	12 762	4.8
1982	12 990	4.8	129	0.0	13 119	4.8	13 132	4.8
1983	13 635	5.0	131	0.0	13 766	5.0	13 781	5.0
1984	13 507	4.9	139	0.1	13 646	4.9	13 661	4.9
1985	13 594	4.9	137	0.0	13 731	4.9	13 746	4.9
1986	13 660	4.9						
1987	14 934	5.3						
1988	14 537	5.1						
1989	14 541	5.1	126	0.0	14 667	5.1	13 813	4.8

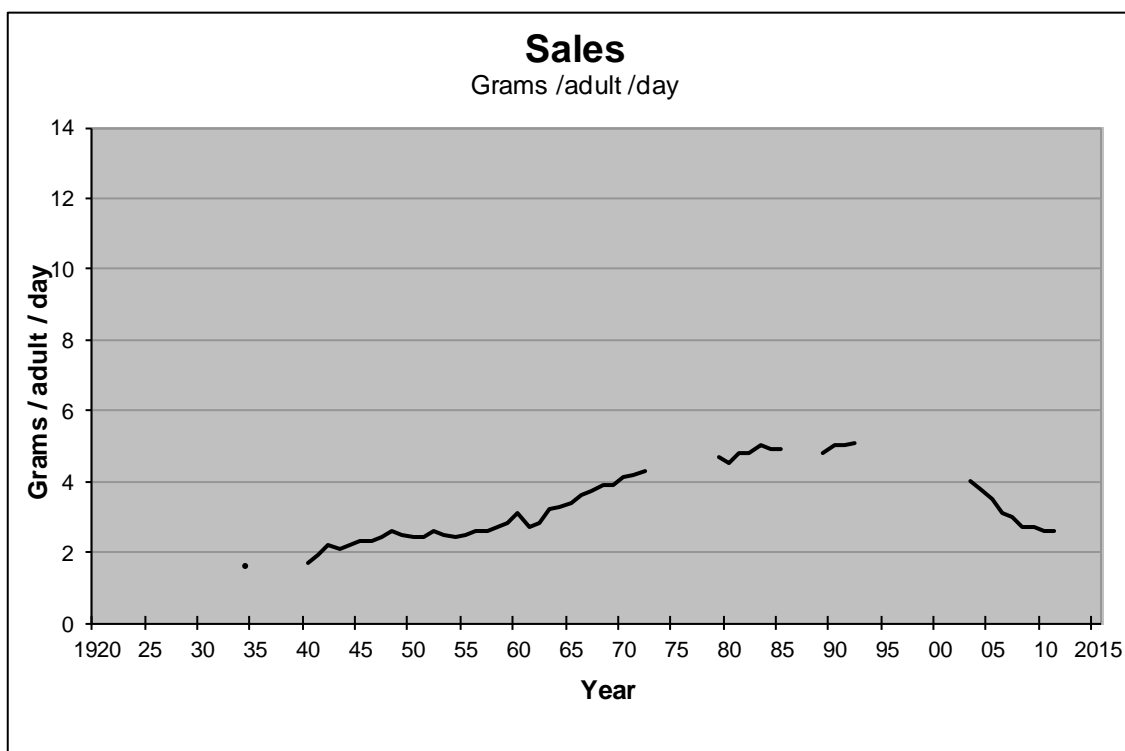
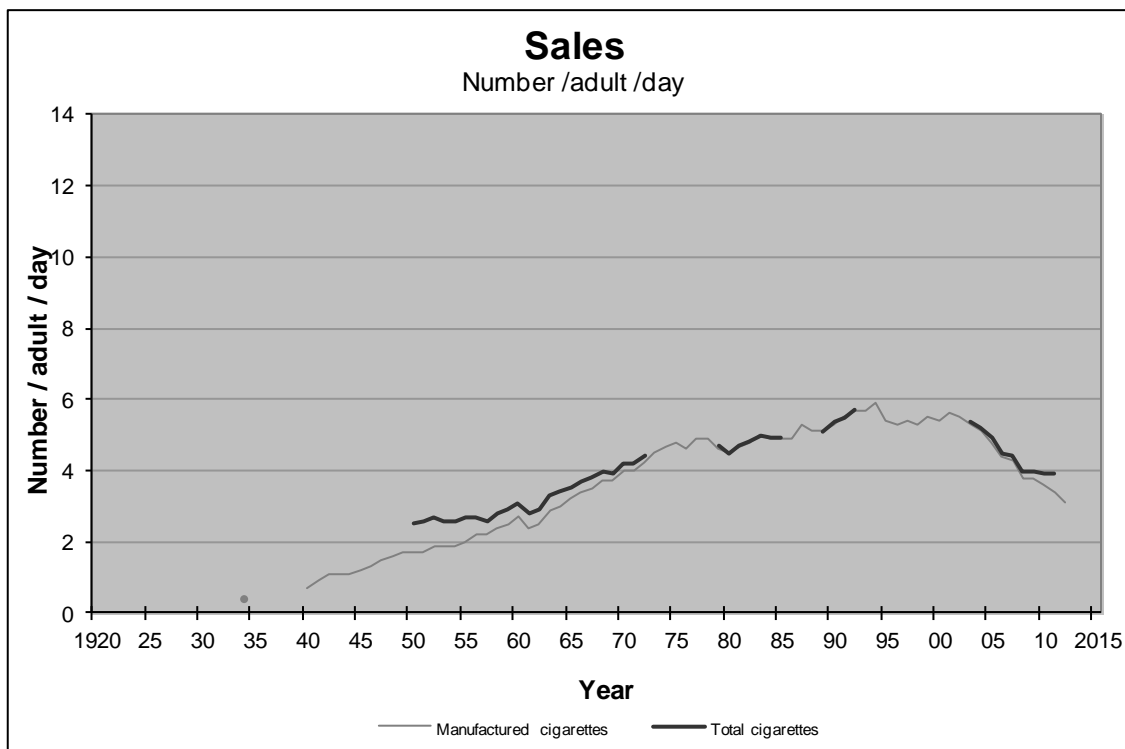
Table 2 (continued)

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	15 486	5.3	123	0.0	15 609	5.4	14 463	5.0
1991	15 930	5.5	130	0.0	16 060	5.5	14 642	5.0
1992	16 700	5.7	139	0.0	16 839	5.7	15 097	5.1
1993	17 022	5.7						
1994	17 594	5.9						
1995	16 247	5.4						
1996	16 150	5.3						
1997	16 475	5.4						
1998	16 300	5.3						
1999	17 200	5.5						
2000	16 800	5.4						
2001	17 600	5.6						
2002	17 400	5.5						
2003	17 000	5.3	456	0.1	17 456	5.4	12 903	4.0
2004	16 500	5.1	409	0.1	16 909	5.2	12 256	3.8
2005	15 600	4.8	380	0.1	15 980	4.9	11 452	3.5
2006	14 330	4.4	295	0.1	14 625	4.5	10 276	3.1
2007	14 030	4.3	437	0.1	14 467	4.4	9 978	3.0
2008	12 480	3.8	570	0.2	13 050	4.0	8 850	2.7
2009	12 370	3.8	637	0.2	13 007	4.0	8 720	2.7
2010	11 860	3.6	827	0.3	12 687	3.9	8 425	2.6
2011	11 230	3.4	1 720	0.5	12 950	3.9	8 621	2.6
2012 ¹	10 130	3.1						

¹ Per adult data based on 2011 population.

Source: Manufactured cigarettes and all tobacco products, Tables 1.1 and 1.2. Hand-rolled cigarettes, see *Notes on sources of sales data: Estimates of numbers of hand-rolled cigarette*, p. 39. Population, see *Population*, Methods p. 14.

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 estimated hand-rolled cigarette consumption.
Source: Table 2.

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

Year	Filter, percentage of:	
	Production	Sales
1960	17.0	
1961	19.1	19.1
1962	22.2	22.2
1963	23.8	22.6
1964	32.5	24.7
1965	28.0	28.1
1966	33.0	33.3
1967	38.0	38.0
1968	43.0	42.6
1969	46.0	46.4
1970	57.0	51.0
1971	57.0	56.6
1972	60.0	56.6
1973	76.0	73.2
1974	77.0	76.4
1975	79.0	77.5
1976	77.0	76.1
1977	77.0	77.6
1978	77.4	76.7
1979	80.7	78.3
1980	82.3	80.8
1981	70.6	83.5
1982	85.0	84.7
1983	85.5	85.4
1984	85.8	85.4
1985	86.7	86.7
1986	88.6	
1987	90.2	
1988	91.9	
1989	93.3	
1990	94.4	
1991	94.9	
1992	95.2	
1993	95.5	
1994	95.4	
1995	95.6	
1996	95.7	
1997	95.7	
1998	95.7	
1999	96.5	
2000	97.1	
2001	97.2	
2002	97.2	
2003	97.2	
2004	97.2	

Source: see *Notes on sources of sales data: Plain/Filter cigarette sales*, p. 39. See also *Menthol cigarette sales*, p. 39, *Slim cigarette sales*, p. 39 and *Tar and nicotine machine yields of cigarettes*, p. 39.

Table 4M Prevalence of smoking, males: selected surveys by age
(continues on p. 18)

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
75	1	U	U	44																				
77	2	U	R	55																				
77	2	U	U	48																				
80	2	U	U	46																				
83	2	U	U	41																				
83	3	UC	U	35																				
83	4	U	U	62																				
83	5	U	R	45																				
84	2	U	R	40																				
84	13	U	U	37																				
85	2	U	R	35																				
85	2	U	U	36																				
85	5	U	R	42																				
87	5	U	R	34																				
87	6	U	U	47																				
87	7	U	R	31			53			41			32			28			20		18		16	33
87	7	UC	U	18			48			32			20									33		
87	7	A	U	18			49			33			21									34		
87	10	UC	U	60			69			50			28									52		
87	10	A	U	60			70			50			29									52		
88	2	U	R	45																				
88	2	U	U	46																				
88	10	TC	U	43			51			34			29									39		
88	10	A	U	43			51			34			29									39		
88	10	TC	U	54			52			36			23									42		
88	10	A	U	54			52			36			24									43		
89	10	TC	U	51			56			47			28									46		
89	10	A	U	51			56			47			28									46		
89	10	TC	U	55			59			43			30									47		
89	10	A	U	55			60			43			30									47		
89	15	UC	A	7		22		43																
90	9	U	*	5		13																		
90	9	U	A	2		7																		
90	10	MC	U	48			53			31			24									39		
90	10	TC	U	49			53			32			27									40		
90	10	A	U	49			53			32			27									40		
90	12	U	U	40																				
91	10	MC	U	40			59			31			26									40		
91	10	TC	U	40			59			31			28									40		
91	10	A	U	40			59			31			28									41		
92	10	MC	U	52			49			40			23									41		
92	10	TC	U	53			49			40			23									41		
92	10	A	U	53			51			40			24									42		
92	16	UC	A	7		22		41																
93	13	U	U	42																				

Table 4F Prevalence of smoking, females: selected surveys by age
(continues on p. 19)

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	1	U	U	6																			
77	2	U	R	14																			
77	2	U	U	3																			
80	2	U	U	1																			
83	2	U	U	9																			
83	3	UC	U	10																			
83	4	U	U	30																			
83	5	U	R	10																			
84	2	U	R	17																			
84	13	U	U	10																			
85	2	U	R	17																			
85	2	U	U	9																			
85	5	U	R	10																			
87	5	U	R	5																			
87	6	U	U	13																			
87	7	U	R	10				12			6		2		1		1		0		0		5
87	7	UC	U	6				13			3		1		1						5		
87	7	A	U	6				13			3		1		1						5		
87	10	UC	U	30				22			6		1		1						14		
87	10	A	U	30				23			6		1		1						14		
88	2	U	R	31																			
88	2	U	U	12																			
88	10	TC	U	16				22			1		0		0						9		
88	10	A	U	17				22			1		0		0						10		
88	10	TC	U	30				22			4		2		2						13		
88	10	A	U	30				22			4		2		2						13		
89	10	TC	U	26				19			4		3		3						12		
89	10	A	U	26				19			4		3		3						12		
89	10	TC	U	26				20			4		2		2						12		
89	10	A	U	26				20			5		2		2						12		
89	15	UC	A	9		23		37															
90	9	U	*	0		7																	
90	9	U	A	0		3																	
90	10	MC	U	22				22			2		0		0						10		
90	10	TC	U	22				22			3		0		0						11		
90	10	A	U	22				22			3		0		0						11		
90	12	U	U	20																			
91	10	MC	U	27				21			5		1		1						12		
91	10	TC	U	27				22			5		1		1						12		
91	10	A	U	27				22			5		1		1						12		
92	10	MC	U	21				21			3		2		2						11		
92	10	TC	U	22				21			3		2		2						11		
92	10	A	U	22				21			3		2		2						11		
92	16	UC	A	13		27		43															
93	13	U	U	14																			

Table 4M (continued from p. 18, continues on p. 22)
Prevalence of smoking, males

Year	Source	Product	Frequency	Age Groups																	All ages			
				12	13	14	15	16	17	18	19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64		65 - 69	70 - 74	75 - 79
02	11	M C R		50					52					34					20		39			
02	11	T C R		53					52					34					21		40			
02	11	A R		53					52					36					21		40			
02	11	M C U		55					53					40					22		42			
02	11	T C U		58					54					40					22		43			
02	11	A U		58					54					41					22		43			
02	26	A *		8		13																		
02	26	A R		14		18																		
03	20	UC *		2																				
03	24	UC *		20																				
03	24	UC A		28																				
03	25	UC *		2	7	13	16	23	26															
03	25	UC A		7	16	24	28	34	38															
04	21	UC A		26																				
04	22	UC A		13																				
05	7	UC R		26					34			41		30			19		12		6	*	27	
05	7	A R		26					34			41		31			19		12		7	*	27	
05	7	A A		31					39			45		34			21		13		8	*	31	
05	8	UC R		26					34			41		30			19		12		7	1	27	
05	8	A R		26					34			41		31			20		12		7	1	28	
05	8	A A		31					39			45		34			22		13		8	1	31	
05	11	M C R		18					47					41					18			32		
05	11	T C R		18					49					42					19			33		
05	11	A R		18					49					42					20			33		
05	11	M C U		26					49					42					20			34		
05	11	T C U		26					51					44					21			36		
05	11	A U		26					52					44					22			36		
05	23	UC A		15																				
05	34	U R		20																				
05	34	U A		24																				
06	11	M C R		29					36					40					20			31		
06	11	T C R		29					38					40					21			32		
06	11	A R		29					39					40					21			32		
06	11	M C U		31					40					42					21			33		
06	11	T C U		31					42					42					22			34		
06	11	A U		31					44					45					22			35		
06	26	A *		2		5																		
06	26	A R		4		9																		
06	35	U U		30																				
07	24	UC *		9																				
07	24	UC A		19																				
07	25	UC A		4	9	13	20	23	31															
07	31	U A		37					48			47		40			23			40				
07	35	U U		33																				

Table 4M (continued from p. 20)
Prevalence of smoking, males

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+	
08	27	UC	R		4		12																			
08	30	U	A												25											
08	34	U	R																							
08	34	U	A																							
09	11	MC	R							22					32								14		27	
09	11	TC	R							27					32								13		28	
09	11	MC	A							25					35								14		29	
09	11	TC	A							27					33								13		28	
09	11	A	A							30					35								14		30	
09	26	A	*		2			7																		
09	26	A	R		3			11																		
10	28	TC	R																							
10	28	TC	A							37					38								38		22	36
10	32	A	A																							
10	34	U	R																							
10	34	U	A																							
10	35	U	U																							
11	24	UC	*																							
11	24	UC	A																							
11	25	UC	A		6	9	17	28	29	36																
11	33	U	A		18																					
12	31	U	A												40								30		33	

Source: see *Notes on sources of survey data*, p. 40
 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. 40
 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	75	80+
87	7	UC		14					20				22				17				20				
87	10	UC E		19					19				19				16				19				
88	10	TC E		15					17				19				17				17				
89	10	TC E		16					19				18				18				18				
90	10	TC E		18					17				19				18				18				
91	10	TC E		17					22				24				17				20				
92	10	TC E		14					19				22				19				18				
94	10	TC E		14					17				19				19				17				
94	11	TC E		14					17				19				19				17				
95	7	UC	8.3	14		14	17	21		23		24		21		18		15				21			
95	11	TC E		16					18				22				15				18				
95	14	UC E*		14																					
95	24	UC E		11																					
98	7	UC E*		15					18		20		20		19		17		15		13		18		
98	26	UC	0.7	2.9																					
98	29	UC E*		18					21		23		21		22		19		24		18		21		
99	24	UC E		9.0																					
99	29	UC E*		19					22		23		22		21		19		17		26		22		
99	36	UC		21																					
00	29	UC E*		20					22		23		23		23		20		23		26		22		
01	29	UC E*		21					22		23		23		23		21		21		22		22		
02	11	TC E		16					20				23				20				19				
03	24	UC E		15																					
03	25	UC E	6.8	8.0	8.5	9.2	9.9	11																	
05	7	UC E*		15					17		19		19		20		17		17		*		18		
05	8	UC E*		15					17		19		19		20		17		16		13		18		
05	11	TC E		13					19				22				18				19				
06	11	TC E		11					15				20				16				16				
07	24	UC E		6.9																					
08	30	UC		18																					
09	11	TC		15					15				19				17				17				
10	28	MC		19																					
10	28	TC		20																					
10	34	U		16																					
11	24	UC E		6.3																					

Source: see *Notes on sources of survey data*, p. 40
 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. 40
 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		65	70	75	80+	
87	7	UC		9.8					13				16				12				13					
87	10	UC E		10					12				16				11				11					
88	10	TC E		10					14				2.5				0.0				13					
89	10	TC E		11					15				13				6.2				12					
90	10	TC E		8.3					12				6.9				0.0				10					
91	10	TC E		10					14				12				21				12					
92	10	TC E		12					13				17				16				13					
94	10	TC E		12					12				14				18				12					
94	11	TC E		12					12				14				18				12					
95	7	UC	5.0	11		12	13	14		15		15		17		16		11				14				
95	11	TC E		11					15				14				0.0				13					
95	14	UC E*		12																						
95	24	UC E		9.2																						
98	7	UC E*		13					13		14		14		15		14		12		*	14				
98	26	UC	0.4	2.9																						
98	29	UC E*		16					15		16		16		19		11		9.7		9.7	16				
99	24	UC E		8.4																						
99	29	UC E*		14					15		16		17		12		11		14		0.0	15				
99	36	UC		14																						
00	29	UC E*		15					16		19		15		16		12		19		24	16				
01	29	UC E*		17					16		17		18		16		14		19		0.0	16				
02	11	TC E		12					12				12				17				12					
03	24	UC E		14																						
03	25	UC E	5.7	7.0	7.1	7.7	8.8	8.4																		
05	7	UC E*		12					12		13		13		15		12		12		*	13				
05	8	UC E*		12					12		13		13		15		12		12		*	13				
05	11	TC E		12					14				15				23				14					
06	11	TC E		9.5					13				14				11				12					
07	24	UC E		6.5																						
08	30	UC		13																						
09	11	TC		12					14				14				14				14					
10	28	MC		16																						
10	28	TC		16																						
10	34	U		12																						
11	24	UC E		8.1																						

Source: see *Notes on sources of survey data*, p. 40
 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. 40
 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
87	7	UC	2.4				9.5				7.1				3.5					6.5	68%T			
87	10	UC*	11				13				9.3				4.5					9.6	99%T			
88	10	TC*	6.6				8.8				6.4				4.9					6.7	73%T			
89	10	TC*	8.0				11				8.6				4.9					8.1	89%T			
90	10	TC*	8.9				9.2				6.2				4.8					7.3	74%T			
91	10	TC*	7.0				13				7.3				4.7					8.2	84%T			
92	10	TC*	7.5				9.4				8.6				4.4					7.4	74%T			
94	10	TC*	5.9				8.5				7.3				3.8					6.4	66%T			
94	11	TC*	5.9				8.4				7.3				3.8					6.4	66%T			
95	7	UC	0.0	1.2		3.5	6.7	10		9.7		7.6		4.5		2.8		1.3			5.6	67%T		
95	11	TC*	5.9				9.2				7.3				3.4					6.5	72%T			
95	14	UC*	5.6																		65%T			
95	24	UC	1.4																				**	
98	7	UC*	3.9				8.2		8.7		6.2		4.0		2.4		1.1		0.6			5.6	61%T	
98	26	UC	0.0	0.5																				**
98	29	UC*	4.4				8.3		9.6		6.1		4.2		2.4		2.3		1.2			6.0	62%T	
99	24	UC	1.6																				**	
99	29	UC*	4.9				9.1		10		7.1		4.1		2.9		1.0		0.7			6.5	65%T	
99	36	UC	7.4																		82%T			
00	29	UC*	4.2				8.8		9.8		7.7		4.2		3.1		1.0		0.4			6.4	67%T	
01	29	UC*	4.3				8.4		9.8		8.0		4.6		3.2		1.0		0.3			6.4	65%T	
02	11	TC	8.6				10				7.8				4.2					7.7	79%T			
03	24	UC	2.9																				**	
03	25	UC	0.1	0.6	1.1	1.5	2.2	2.8																**
05	7	UC*	3.8				5.7		7.7		5.8		3.7		2.1		1.1		*			4.8	61%T	
05	8	UC*	3.9				5.8		7.7		5.9		3.8		2.1		1.1		0.1			4.9	62%T	
05	11	TC	2.3				9.2				9.3				3.5					6.2	91%T			
06	11	TC	3.0				5.6				8.1				3.3					5.0	72%T			
07	24	UC	0.6																				**	
08	30	UC	4.4																		69%T			
09	11	TC	4.0				4.7				8.0				2.2					4.6	84%T			
10	28	TC	6.9																		148%T			
10	34	U	3.6																		59%T			
11	24	UC	0.8																				**	

Source: *Notes on sources of survey data*, p. 40
 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. 40
 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. See Table 8 footnote 8 for hand-rolled tobacco estimation.
 ** = 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+	
87	7	UC																							0.7	68%T
87	10	UC*																							1.6	99%T
88	10	TC*																							1.2	73%T
89	10	TC*																							1.4	89%T
90	10	TC*																							1.1	74%T
91	10	TC*																							1.5	84%T
92	10	TC*																							1.4	74%T
94	10	TC*																							1.8	66%T
94	11	TC*																							1.8	66%T
95	7	UC	0.0																						0.9	67%T
95	11	TC*																							1.8	72%T
95	14	UC*																								65%T
95	24	UC																								**
98	7	UC*																							1.2	61%T
98	26	UC	0.0																							**
98	29	UC*																							1.1	62%T
99	24	UC																								**
99	29	UC*																							1.2	65%T
99	36	UC																								82%T
00	29	UC*																							1.4	67%T
01	29	UC*																							1.4	65%T
02	11	TC																							1.6	79%T
03	24	UC																								**
03	25	UC	0.2	0.4	0.8	1.3	1.5	1.9																		**
05	7	UC*																							1.4	61%T
05	8	UC*																							1.4	62%T
05	11	TC																							2.7	91%T
06	11	TC																							1.5	72%T
07	24	UC																								**
08	30	UC																								69%T
09	11	TC																							2.1	84%T
10	28	TC																								148%T
10	34	U																								59%T
11	24	UC																								**

Source: *Notes on sources of survey data*, p. 40
 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. 40
 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.
 See Table 8 footnote 8 for hand-rolled tobacco estimation.
 ** = 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+						
87	7	UC	3.6				14				10				5.1					9.6	68%T										
87	10	UC*	11				13				9.3				4.6					9.7	99%T										
88	10	TC*	9.0				12				8.7				6.7					9.1	73%T										
89	10	TC*	8.9				12				9.6				5.5					9.1	89%T										
90	10	TC*	12				12				8.4				6.4					9.8	74%T										
91	10	TC*	8.4				16				8.8				5.6					9.8	84%T										
92	10	TC*	10				13				12				6.0					10	74%T										
94	10	TC*	8.8				13				11				5.7					9.6	66%T										
94	11	TC*	8.9				13				11				5.7					9.6	66%T										
95	7	UC	0.0	1.8	5.2	10	15	14	11	6.7	4.2	1.9						8.3	67%T												
95	11	TC*	8.2				13				10				4.7					9.1	72%T										
95	14	UC*	8.7																		65%T										
98	7	UC*	6.5				13				14				10				6.7					3.9	1.7	1.0	9.2	61%T			
98	29	UC*	7.1				13				15				9.9				6.8				3.9				3.6		1.9	9.6	62%T
99	29	UC*	7.5				14				16				11				6.3				4.4				1.6		1.1	10	65%T
99	36	UC	9.1																		82%T										
00	29	UC*	6.3				13				15				11				6.3				4.6				1.5		0.6	9.5	67%T
01	29	UC*	6.5				13				15				12				7.0				4.9				1.5		0.5	9.8	65%T
02	11	TC	11				13				9.9				5.3												9.7	79%T			
05	7	UC*	6.2				9.3				13				9.5				6.0				3.4				1.8		*	7.8	61%T
05	8	UC*	6.2				9.3				13				9.5				6.1				3.4				1.8		0.1	7.9	62%T
05	11	TC	2.5				10				10				3.9													6.8	91%T		
06	11	TC	4.2				7.9				11				4.6													7.0	72%T		
08	30	UC	6.4																		69%T										
09	11	TC	4.7				5.7				9.5				2.6													5.5	84%T		
10	28	TC	4.7																		148%T										
10	34	U	6.1																		59%T										

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. 40
 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. 40
 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.
 See Table 8 footnote 8 for hand-rolled tobacco estimation.
 -- = 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	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64			65-69
87	7	UC				0.8				2.5				0.7					0.1		1.0	68%T
87	10	UC*				3.0				2.5				1.0					0.1		1.6	99%T
88	10	TC*				2.3				4.2				0.0					0.0		1.7	73%T
89	10	TC*				3.1				3.2				0.6					0.2		1.6	89%T
90	10	TC*				2.5				3.6				0.3					0.0		1.5	74%T
91	10	TC*				3.3				3.6				0.7					0.1		1.8	84%T
92	10	TC*				3.5				3.7				0.6					0.4		1.9	74%T
94	10	TC*				5.5				3.7				1.6					1.1		2.8	66%T
94	11	TC*				5.4				3.7				1.6					1.1		2.8	66%T
95	7	UC	0.0		0.5	1.7	3.1		3.6	2.5		0.9		0.3		0.1		0.1			1.3	67%T
95	11	TC*				3.8				5.2				1.2					0.0		2.5	72%T
95	14	UC*								3.2												65%T
98	7	UC*				2.2			4.3	3.5		1.6		0.5		0.2		0.1	*		2.0	61%T
98	29	UC*				2.4			4.0	2.4		1.0		0.2		0.2		0.4	0.5		1.8	62%T
99	29	UC*				1.7			4.4	2.5		1.5		0.7		0.2		0.5	0.0		1.9	65%T
99	36	UC								3.0												82%T
00	29	UC*				1.3			4.7	3.3		1.2		1.0		0.2		1.1	0.8		2.0	67%T
01	29	UC*				2.4			4.1	2.7		1.8		1.1		0.3		1.2	0.0		2.1	65%T
02	11	TC				3.9			3.4			1.6				0.2					2.0	79%T
05	7	UC*				2.8			3.2	4.1		2.4		1.3		0.3		0.0	*		2.2	61%T
05	8	UC*				2.8			3.2	4.0		2.4		1.3		0.3		0.0	0.1		2.2	62%T
05	11	TC				3.4			5.4			4.0				0.4					3.0	91%T
06	11	TC				2.1			3.8			2.8				0.2					2.0	72%T
08	30	UC								1.8												69%T
09	11	TC				1.8			4.5			3.8				0.5					2.5	84%T
10	28	TC								3.2												148%T
10	34	U										2.0										59%T

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. 40
 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. 40
 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.
 See Table 8 footnote 8 for hand-rolled tobacco estimation.
 -- = 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		M	F	M	F		
1977	2	U					48	3						
1980	2	U					46	1						
1983	2	U					41	9						
	3	UC			35	10						(8.4	2.0)	
	5	U					45	10						
1984	13	U					37	10						
1985	2	U					36	9						
	5	U					42	10						
1987	5	U					34	5						
	7	UC+U			34	6	35	6	6.8	0.8	68	9.9	1.2	
	7	A					35	6						
	10	UC+A			51	13	52	13	9.5	1.5	99	9.6	1.5	
1988	2	U					46	12						
	10	TC+A			39	9	39	9	6.7	1.1	73	9.1	1.6	
	10	TC+A			41	13	41	13						
1989	10	TC+A			45	12	45	12	8.1	1.4	89	9.0	1.6	
	10	TC+A			46	12	47	12						
1990	10	MC+TC+A	39	10	40	11	40	11	7.2	1.1	74	9.7	1.5	
1991	10	MC+TC+A	39	12	40	12	40	12	8.0	1.5	84	9.6	1.8	
1992	10	MC+TC+A	40	10	41	11	41	11	7.4	1.4	74	10.0	1.9	
1993	13	U					41	13						
1994	10	MC+TC+A	37	14	38	14	38	14	6.3	1.8	66	9.5	2.7	
	11	MC+TC+A	37	14	38	14	38	14	6.3	1.8	66	9.5	2.7	
1995	7	UC+A			31	8	31	8	6.5	1.1	67	9.7	1.6	
	7	A					35	9						
	11	MC+TC+A	35	13	36	13	36	13	6.4	1.7	72	8.9	2.3	
	14	UC+U					38	17	5.2	2.0	65	8.1	3.0	
1998	7	UC+A			31	9	31	9	5.6	1.2	61	9.2	2.0	
	7	A					34	11						
	29	UC+A			28	7	28	7	5.9	1.1	62	9.5	1.7	
	29	A					35	9						

Table 8 (continued)

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	M	F	M	F	M	F				
1999	11	<i>U</i>					43	14									
	29	UC+A			30	8	30	8	6.4	1.2	65			9.9	1.9		
	29	A					35	11									
	36	UC+U					41	24	7.1	2.4	82			8.7	3.0		
2000	29	UC+A			28	8	28	8	6.3	1.3	67			9.4	2.0		
	29	A					34	10									
2001	29	UC+A			28	8	28	8	6.3	1.4	65			9.7	2.1		
	29	A					34	10									
	31	U					36	14									
2002	11	MC+TC+A	38	13	38	13	39	13	7.6	1.5	79			9.6	1.9		
	11	MC+TC+A	41	16	42	16	42	16									
2005	7	UC+A			27	11	27	11	4.8	1.4	61			7.8	2.2		
	7	A					31	12									
	8	UC+A			27	11	28	11	4.9	1.4	62			7.9	2.2		
	8	A					31	12									
	11	MC+TC+A	32	19	33	19	33	19	6.4	2.7	91			7.0	3.0		
	11	MC+TC+A	35	20	36	21	37	21									
2006	34	<i>U</i>					19	8									
	34	U					23	10									
	11	MC+TC+A	31	12	32	12	32	12	5.1	1.4	72			7.2	2.0		
	11	MC+TC+A	33	14	34	14	35	14									
	35	<i>U</i>					30	27									
2007	31	U					35	15									
	35	<i>U</i>					33	28									
2008	30	UC+U					25	10	4.4	1.2	69			6.4	1.8		
	34	<i>U</i>					13	12									
	34	U					14	13									
2009	11	MC+TC	27	15	28	15			4.6	2.1	84			5.5	2.5		
	11	MC+TC+A	29	15	28	16	30	16									
2010	28	TC			35	29			6.9	4.7	148			4.7	3.2		
	28	TC			35	29											
	32	A					27	12									
	34	<i>U</i>					23	10	3.5	1.2	59			6.0	2.0		
	34	U					24	11									
	35	<i>U</i>					28	23									
2012/ ¹⁰	31	U					30	14									

Table 8 (continued/2)

- 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 Table(s) 4 and/or 6 and 7 in those surveys for which some age-specific data are not available (age groups marked as * in Table(s) 4 and/or 6 and 7)
- 2 See *Notes on sources of survey data*, p. 40.
- 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.
Hand-rolling tobacco estimation: For some years, sales data are not available for hand-rolling tobacco. Where sales-adjustment to total cigarette sales has been carried out for one of these years, an estimated value for hand-rolling tobacco sales has been used, by assuming the same value as for an adjacent year, as follows: 1973-1975: assume the 1972 value; 1976-1978: assume 1979 value; 1986: assume 1985 value; 1987-1988: assume 1989 value; 1993-1997: assume 1992 value; 1998-2002: assume 2003 value.
- 9 Number of cigarettes classified as UC = cigarettes (type unspecified) has been adjusted to total cigarette sales and included in this column.
- 10 Calculations based on 2011 population.

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

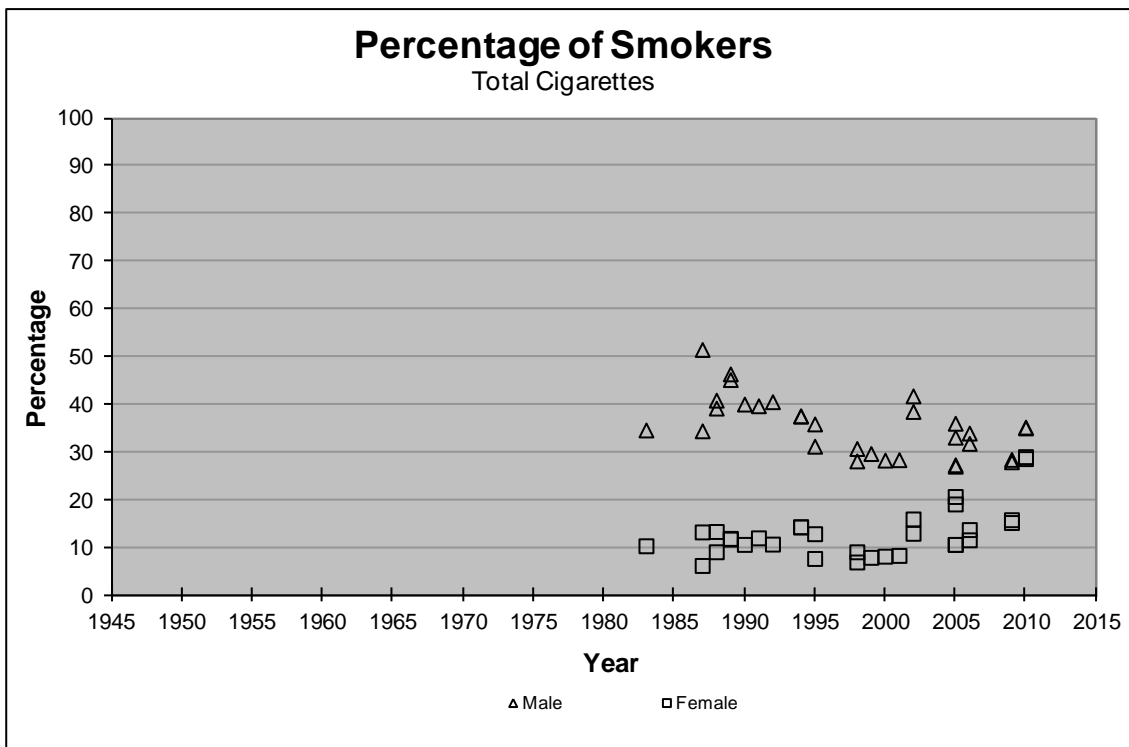
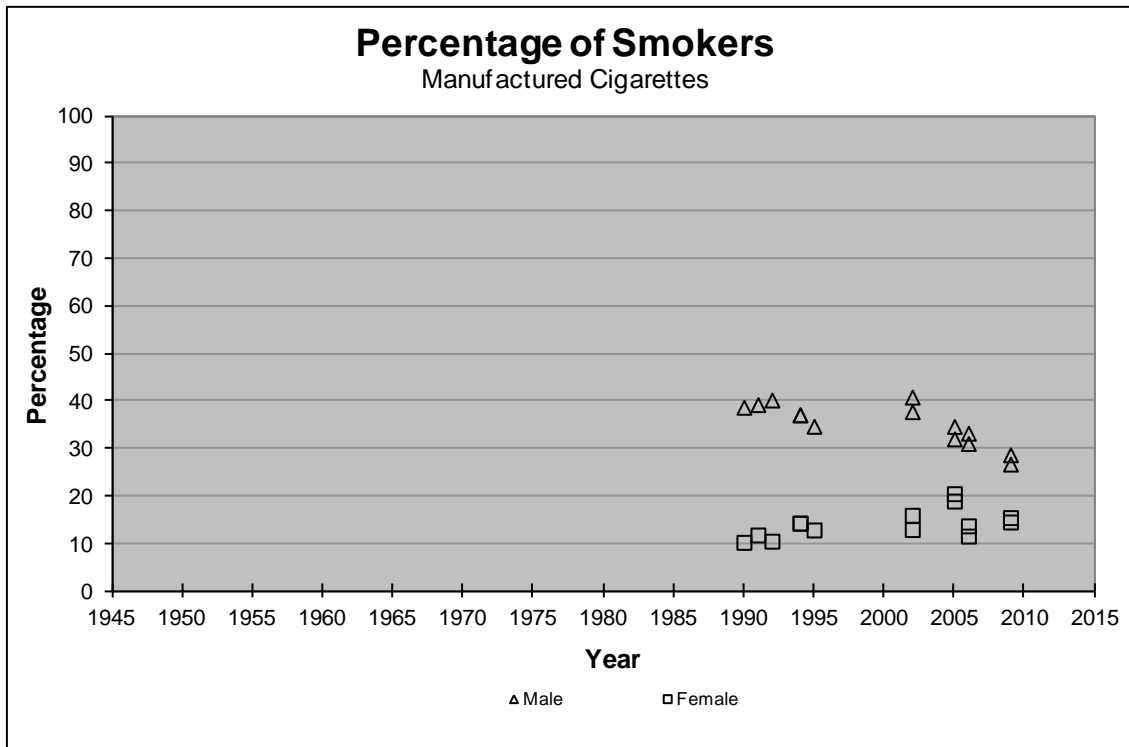
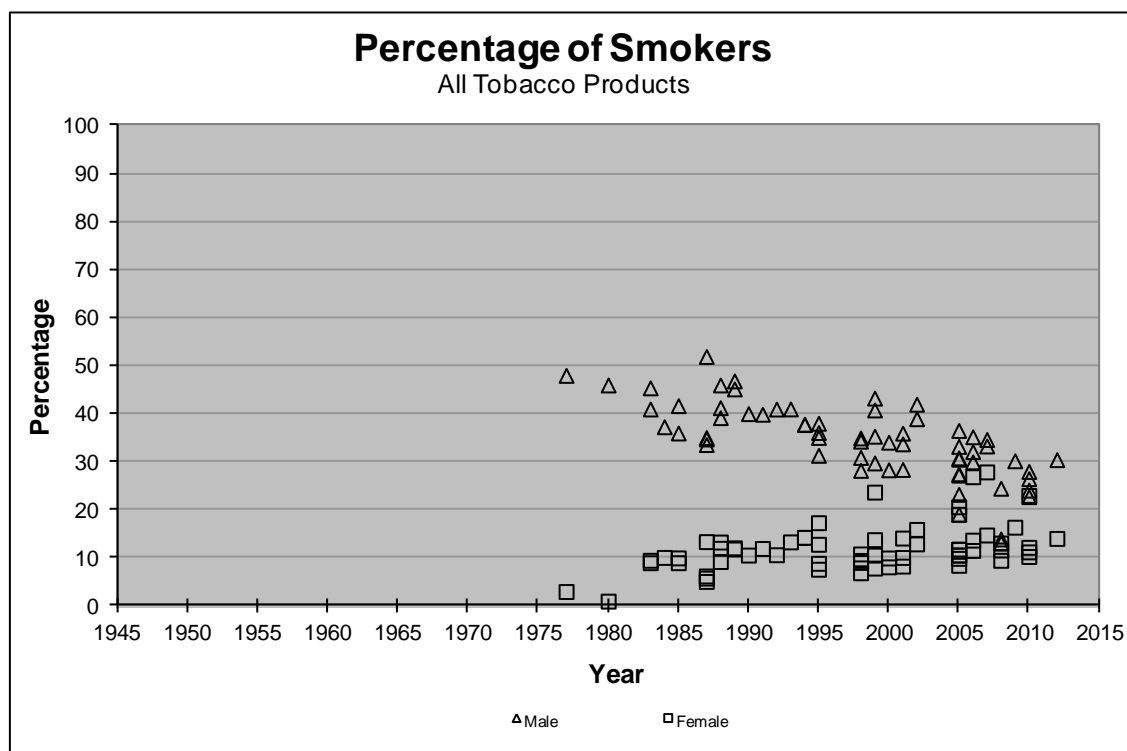
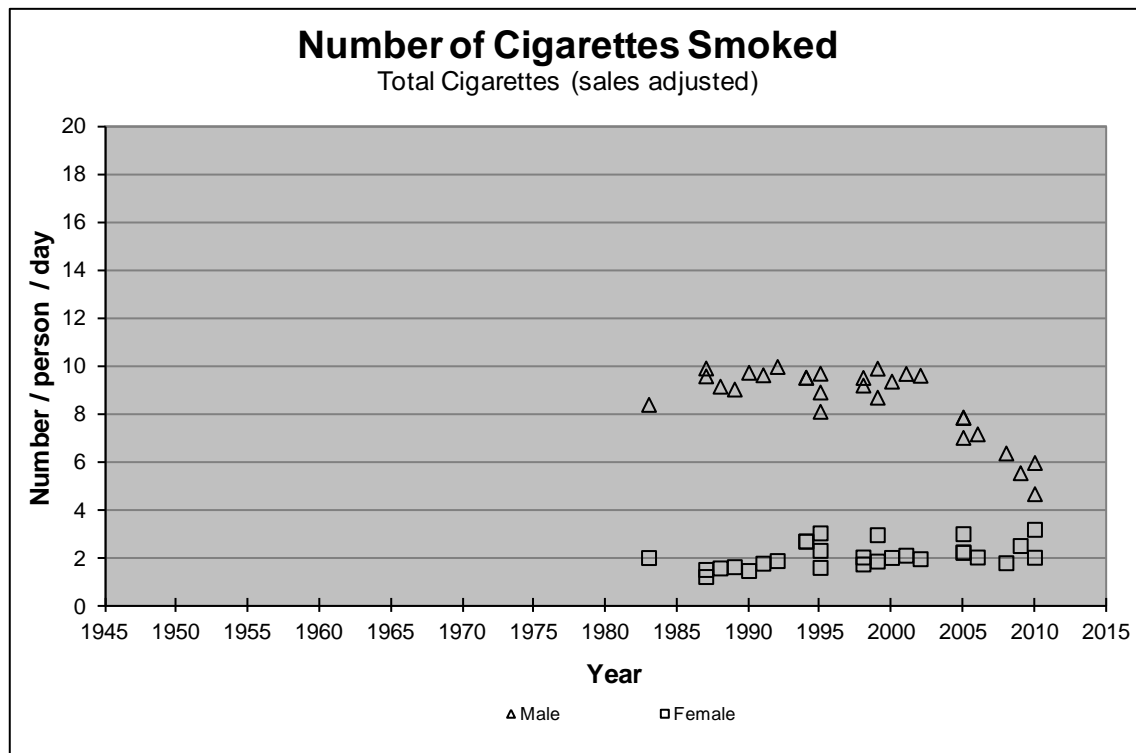


Figure 3 (continued)



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

Figure 4 Estimated number of total 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. 47 under *References*.

Sales data for 1934

Hutson (1937)

See Table 1.1. Data were originally given to the nearest 1 000 pounds and have been converted to tonnes and given to the nearest tonne (1 000 lbs = 0.45359 tonnes). For conversion from weights to numbers we assumed an average weight of 1 g. for cigarettes, 6 g for cigars and 2 g for cigarillos. 1934 represents 1934-1935.

Sales data for 1940-1972

RP6 (Lee (1975))

See Table 1.1. Data by weight, originally given to nearest 100 000 pounds, have been converted to tonnes and given to the nearest 10 tonnes (100 000 lbs = 45.359 tonnes). Where weight conversion factors have been quoted in RP6, the weights have been calculated without rounding and then converted to tonnes.

Notes as given in RP6:

- (a) Details of the weight of tobacco consumed by products were obtained from *Estatística Industrial* published by the National Institute of Statistics, Lisbon, and from trade sources.
- (b) The number of cigarettes consumed have been estimated from the cigarette consumption in pounds weight by using a conversion factor of 2.205 lbs per 1 000. The conversion factor used for cigars and cigarillos was 12 lbs per 1 000.

Sales data for 1973-1985

1973-1978: Maxwell, Jr. (successive years)

1979-1985: Tabaqueira (1986)

See Table 1.2. Data for cigarettes were given in numbers and have been converted to weight assuming 1 g per cigarette, based on values in RP6.

The calculation for total tobacco consumption for 1979-1985 excludes cigars and cigarillos, as data were not available in those years. As consumption in other years was low, this is likely to have had little effect.

Below we have calculated alternative sales estimates. The Anuário Estatístico 1989 (Vilares (1990)) gives cigarette production, in tonnes, for Portugal including Açores and Madeira for 1974-1987. The National Statistical Institute (INE) provided data for imports and exports of cigarettes and other products for 1970-1985 (Correia Távora (1990)). From these we have estimated total sales of cigarettes as follows:

Year	Production tonnes	Net exports tonnes	Sales tonnes
1974	11 572	-31	11 603
1975	12 233	47	12 186
1976	12 409	125	12 284
1977	13 352	118	13 234
1978	13 583	247	13 336
1979	13 507	200	13 307
1980	13 281	228	13 053
1981	13 605	193	13 412
1982	14 864	-1	14 865
1983	15 531	152	15 379
1984	14 798	160	14 638
1985	14 593	155	14 438

These figures are consistently higher than those given by Tabaqueira, possibly because of the inclusion of the autonomous regions of Açores and Madeira.

Sales data for 1986 onwards

Cigarettes:

1986-1997: US Department of Agriculture (USDA) (accessed Jul 2013)

1998-2005: KPMG LLP (2012)

2006-2012: KPMG LLP (2013)

Cigars and cigarillos:

1989-1992: Joossens *et al* (1994)

1993-1995: USDA (1995)

1999: USDA (2000)

2000-2011: Bundesverband der Zigarrenindustrie (accessed Nov 2007, accessed Oct 2013)

Pipe and hand-rolled tobacco:

1989-1992: Joossens *et al* (1994) (provides data for hand-rolled tobacco only)

2003-2010: KPMG LLP (2012)

See Table 1.2. Data for cigarettes, cigars and cigarillos were given in millions and have been converted to weight. We assumed 6 g per cigar, 2 g per cigarillo and 4 g per cigar or cigarillo. For cigarettes, we already assumed 1 g per cigarette in 1985 (see the previous section). Also assuming 0.65 g per cigarette in 2008 and 0.61 g per cigarette in 2012 (based on data from Direcção-Geral da Saude (2008) and (2012) respectively) we estimated values for intervening years by linear interpolation. Data for pipe and hand-rolled tobacco were given by weight (1989-1992) or as cigarette equivalents at a specified conversion rate (2003-2010, 0.75 g per cigarette).

The calculation for total tobacco consumption for 1989-1992 excludes pipe tobacco, because data were not available in those years. As consumption in other years was low, this is likely to have had little effect.

Alternative sales estimates exist. Nogueira *et al* (2011) give cigarette sales volumes estimated by the Associação Nacional de Grossistas (National Association of Wholesalers). These are within 3% of the equivalent estimates by (KPMG LLP (2013)).

Nunes *et al* (2013) give values for tobacco products released for consumption, citing the tax and customs authorities:

	Cigarettes (millions)	Cigars (millions)	Cigarillos (millions)	Fine cut (for hand- rolling) (tonnes)	Other tobacco (for pipes) (tonnes)
2007	12 777	9	91	477	20
2008	12 916	6	71	387	11
2009	11 934	5	79	504	14
2010	14 212	6	118	860	21
2011	11 947	5	91	1 883	80
2012	10 234	4	125	1 691	639

The values to 2010 are national figures. The values for 2011 and 2012 are for continental Portugal only.

These are similar to or a little higher than the estimates by KPMG LLP (2013) shown in Table 1.2.

Estimates of smuggling and cross border sales

The table below summarises estimates for the market share (%) of non-legal sales of cigarettes for Portugal. The sources of the estimates are described below the table. These amounts are additional to the sales figures shown in Table 1.2.

Source:	1	2	3	4
1998	5-10			
2005		5.6		
2006				4.5
2007				2.5
2008				3.9
2009				2.2
2010				2.3
2011			6.3	3.0
2012				2.8
2013				1.9

Sources:

- 1: Joossens and Raw (1998): contraband market share, estimated.
- 2: Shafey *et al* (2009): estimated smuggled cigarettes as a percent of legal sales, quoting Euromonitor International 2007.
- 3: Eriksen *et al* (2012): the illicit share of the total cigarettes market, quoting Euromonitor International 2011
- 4: KPMG LLP (2014): the share of total cigarette consumption that is counterfeit or contraband, based on KPMG's EU Flows Model and Ipsos Empty Pack Surveys.

As shown below, KPMG LLP (2014) estimated the numbers of counterfeit and contraband, and legal non-domestic cigarettes consumed; and outflows of cigarettes to other countries. These volumes are not reflected in the sales figures shown in Table 1.2, which are of legal domestic sales. Illicit whites are a category of counterfeit and contraband consisting of cigarettes produced legally in one market primarily to be sold in another market (where they have limited or no legal distribution) without payment of tax. Legal non-domestic sales are of product that is brought into the market legally by consumers, such as during a cross-border trip.

	Counterfeit and contraband cigarettes (millions)	Of which, illicit whites (millions)	Legal non-domestic cigarettes (millions)	Outflows (millions)	Net outflows (millions)
2006	630		320	1 240	290
2007	330	8	140	1 280	810
2008	470	34	150	1 000	380
2009	260	12	130	630	240
2010	260	12	130	890	500
2011	330	58	70	700	300
2012	270	129	50	750	430
2013	190	52	30	520	300

Estimates of the non-domestic cigarette market (legal and non-legal) vary across Portugal, with cities in the north of the country having more on average than cities in the south. In 2011 the cities of Porto, Braga and Villa Nova De Gaia had the highest levels of non-domestic consumption, at 9.2%, 8.2% and 5.6% of total consumption respectively (KPMG LLP (2012)).

A multinational survey in 2010 by PPACTE was reported by Gallus *et al* (2012) and Joossens *et al* (2014) (see survey source 28). The Portuguese sample size was 1 000 of which 321 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	37.3	56.6
Vending machines	57.1	42.1
Internet	0.0	0.0
Other countries/duty free	0.0	0.0
Smuggled (markets, door-to-door sellers etc)	0.0	0.0
Offered by peers	5.6	1.3

No 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. Packs 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), comprised 0% of manufactured cigarette packs and 0% of hand-rolled packs (although the latter figure is based on only 7 packs).

Some Eurobarometer surveys enquired about contact with smuggled cigarettes and cross border purchasing. In 2008, 0.9% of Portuguese respondents had, in the last 6 months, often seen cigarettes being sold that they thought were smuggled, with a further 3.6% seeing them occasionally (Flash Eurobarometer 253, Gallup Organisation Hungary (2009)). In 2012, 3% reported having purchased tobacco products abroad in the previous year (Eurobarometer 77.1, European Commission (2012)).

Estimates of numbers of hand-rolled cigarettes

We have taken as our estimate of hand-rolled cigarette consumption 83% of pipe and hand-rolling tobacco sales up to 1973 at 0.65 g per cigarette, all hand-rolling tobacco sales from 1979-1992 at 1 g per cigarette, and 95% of pipe and hand-rolling tobacco sales from 2003-2011 at 0.75 g per cigarette. These values are based on the following sources.

RP6 (Beese (1968)) gave hand-rolled cigarette consumption in 1966 as 1.0 million pounds (450 tonnes) equivalent to 697 million cigarettes, out of a total tobacco consumption of 1.2 million pounds (540 tonnes). These quantities imply 0.65 g per hand-rolled cigarette, and 83% of loose tobacco used for hand-rolling.

Data from Tabaqueira (1986) show hand-rolling tobacco as 90-93% of all loose tobacco consumption in the period 1979-1985.

KPMG LLP (2012) assumes a weight of 0.75 g per cigarette but gives no indication of the proportion of loose tobacco used for hand-rolling.

The sales data given by Nunes *et al* (2013) (shown above) imply that 96-97% of pipe and hand-rolling tobacco sold during 2007-2011 was in the form of fine cut (hand-rolling) tobacco.

Plain/Filter cigarette sales

1960-2004, percentage of production: USDA (accessed Jul 2013)

1961-1978, percentage of sales: Maxwell, Jr. (successive years)

1979-1985, percentage of sales: Tabaqueira (1986)

In recent years in Portugal, imports and exports have been high compared with production. For example, in 2004, imports and exports amounted to 10.7% and 35.9% of production respectively (USDA (accessed Jul 2013)). It is unclear what proportions of these are plain or filter cigarettes.

Menthol cigarette sales

In 2012, menthol cigarettes accounted for <1% of total cigarette consumption (KPMG LLP (2013)).

Slim cigarette sales

In 2012, slim cigarettes accounted for 2% of total cigarette consumption (KPMG LLP (2013)).

Tar and nicotine machine yields of cigarettes

The tar yield per cigarette was limited by EC directive (Directive 90/239/EEC) to 15 mg by the end of 1992, and to 12 mg by the end of 1997 (Harkin *et al* (1997)). The nicotine yield per cigarette has been limited to 1.3 mg since the end of 1992 United States Department of Agriculture Economic Research Service (USDA) (1996)). From 1 January 2004, these limits were reduced to 10 mg for tar and 1 mg for nicotine per cigarette ASPECT (Analysis of the Science and Policy for European Control of Tobacco) Consortium (2004). Details of the tar and nicotine content of all cigarette brands on sale in Portugal in 2008 and 2012 confirm that these limits are being adhered to (Direcção-Geral da Saude (2008, 2012)) but no sales-weighted average yield values are available.

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. 47 under *References*.

Source number

1 Fraga *et al* (2005) citing Magalhães *et al* (1996)

- a. Study in 1975 in rural and urban Portugal. Sample size 2 060, age range 25-64 years. The prevalence of smoking, by type of area, is given as:

Type of area	Prevalence of smoking	
	Males	Females
Rural areas	34.7	5.7
Urban areas	52.6	6.2

The results given in Table 4 are simple averages over types of area.

- b. Data in earlier editions from Benjamin (1978) were in error. The Fraga *et al* results probably relate to the same survey.

2 Joossens *et al* (1994) quoting Conselho de Prevenção do Tabagismo

- a. Joossens *et al* gave no details of the source surveys. For 1977, 1980 and 1983, the surveys may be the same as those reported by Fraga *et al* (2005):

	Area	Sample size	Age range	Sources cited
1977*	Bairro da Musgueira	1 301	>15	Magalhães <i>et al</i> (1996)
1980	Bairro da Musgueira	711	25-64	Magalhães <i>et al</i> (1996)
1983	Metropolitan Lisbon	7 530	15+	Cayolla da Mota (1984), Falcão (1988)

*Fraga *et al* (2005) gave the prevalence for females in 1977 as 33%, which we assume to be a typographical error: the corresponding figure given by Joossens *et al* is 3%.

- b. Joossens *et al* also reported data for adults (age 15+) for 1984 which are presented by Euroexpansao (source 13 below), and for 1987 which are presented by Inquérito Nacional de Saúde (source 7). The results for 1988 may be from the same study as the Eurobarometer results for that year (see source 10): results from both sources are presented.
- c. Regular smokers: smoked daily.

3 Tabaqueira (1986)

- a. No original source.

4 Geizerova and Masironi (1988)

- a. No original source.

5 Organisation for Economic Co-operation and Development (1993)

- a. No original source.

6 MacLean *et al* (1991), do Carmo (1997)

- a. WHO-CINDI (Countrywide Integrated Noncommunicable Diseases Intervention) programme. Baseline survey, using the MONICA protocol, carried out in four counties of the district of Setúbal, Portugal in 1987 (Cruz (1989)). Sample size of 3 000 residents aged 15 to 64, but results available for ages 25-64 only.
- b. The results given in the previous edition as source 6 (Karaoglou and Naett (1991), quoting Europe against Cancer Programme, and Hill (1992), quoting Commission des Communautés Européennes (1987),) have been removed because they have been found to duplicate the Eurobarometer results (see source 10).

7, 8 Santana (2000b, 2000a), Padrão *et al* (2007), Carvalho and Pereira Miguel (2009), Dias *et al* (2009), Machado *et al* (2009), Matias Dias (2009), Precioso *et al* (2009)

- a. Inquérito Nacional de Saúde (National Health Survey). Representative samples of the population excluding institutionalized persons. Stratified by region and sub-region, with household as the sampling unit. Face-to-face interviews at the respondents' homes.

Year	Sample size	Regions studied	Notes
1987	41 585	Continental Portugal	
1995/1996	49 718	Continental Portugal	
1998/1999	48 606	Continental Portugal	Response rate 82%
2005/2006	41 193	All regions including Azores and Madeira	Results weighted by age, sex and regional distribution to the population of Portugal in 2005.

- b. Results given as Source 7 relate to continental Portugal. Results given as Source 8 relate to all Portugal including the autonomous regions of Azores and Madeira. Results for both are available for the 2005/2006 survey. See *Additional information (not presented in tables)*, p. 46 for an estimate of smoking prevalence in Azores.
- c. Regular smokers: (1987) smoked regularly in last 2 weeks, (1995 onwards) smoked daily.
- d. Lowest age group (1995 only) is 10-14. Highest age groups are 75-84 and 85+. The *All ages* values refer to ages 15+ (10+ in 1995); age-specific data are not available for the age groups marked *.
- e. Consumption category estimation (1998 onwards) based on two categories, 1-19 and 20+ cigarettes/cigarette smoker/day, and resulting figures should be regarded with caution.

9 van Reek *et al* (1992), van Reek and Adriaanse (1995)

- a. A series of surveys of Young Europeans. About 800 children aged 11-15 years interviewed in each EC country except Luxembourg (where only 250 interviewed). Lowest age group 11-12. Interviews conducted at home, with parents absent.
- b. Smokers marked as frequency *: smoked daily. All smokers: smoked at least once a week.

10, 11 Rabier *et al* (1989), Reif and Melich (1990, 1991a, 1991b, 1992, 1995, 1998a, 1998b, 2000), Reif and Marlier (1998), Melich (2006), Christensen (2004), Papacostas (2008, 2009, 2012)

- a. Eurobarometer Surveys commissioned by the European Commission to monitor public opinion in the European Union. 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. For surveys before 1994 the sample consisted of people aged 15 and over who were resident in the country and had the country's nationality (source 10). For surveys after 1994 the sample consisted of people aged 15 and over who were resident in the country and had the nationality of any of the member states (source 11). For 1994 itself (Eurobarometer survey 41.0) results were available according to both sample definitions and both are presented.
- d. Two waves of the survey were carried out in each of 1988 and 1989. Prevalence data from both waves are presented in Table 4. Data on cigarettes per smoker and per person are available only from the first wave in each year.
- e. Frequency U (in Table 4) represents positive answers to questions such as "Do you smoke cigarettes?" or "You smoke packeted cigarettes". From 2002-2006 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. The 2009 survey used a questionnaire format that clearly asked about regular and occasional smoking and so frequency codes R and A are used.
- f. Consumption category estimation based on <5, 5-9, 10-14, 15-19, 20-24, 25-30, 31-34, 35-40 and 41+ cigarettes/smoker/day (1987 only) and <5, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39 and 40+ cigarettes/smoker/day (other years). Exact values for cigarettes/smoker/day are available for 2009 (see also Appendix III).
- g. Before 2002 the calculation of cigarettes per person was based on prevalence of smoking (daily and non-daily) and number of cigarettes per daily smoker, so may overestimate.

12 World Health Organization (1997)

- a. No original source. Data presented as 1990 represent approximated results for 1989-1992.

13 Fraga *et al* (2005) citing Magalhães *et al* (1996)

- a. Surveys of Portugal by market research organisation Euroexpansão in 1984 and 1993. Sample sizes (1984) 1 361, (1993) 2 078.
- b. Assumed extensions to age distribution for percentage smokers are shown in the extended version of Table 4 in the Excel tables workbook.

14 Ramos and Barros (1998)

- a. Health survey in Porto. Random sample using electoral lists. Sample size (males) 535, (females) 653. Response rate 80%.
- b. Consumption category estimation based on two categories, 1-19 and >20 (assume 20+) cigarettes/smoker/day, and resulting figures should be regarded with caution.
- 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.

15 Machado Rodrigues and Mendes (1994), Machado Rodrigues *et al* (1996)

- a. Studies “Estudos em meio escolar” (Students in middle school). These surveys asked about use of licit and illicit drugs. Representative sample of public schools throughout continental Portugal.

	Ages reported	Sample size	
		Male	Female
1989	12-18	4 830	5 301
1995	12-15	2 357	2 410

- b. Sex-specific results are available only for 1989 and are given in Table 4. The prevalence of smoking, sexes combined, age 12-15, was 17.8% in 1995 compared with 19.1% in 1989.
- c. Smokers: smoked in the previous 30 days.
- d. A comparable survey was conducted in Lisbon only in 1992, see source **16**. In later years, the survey was continued in collaboration with the international ESPAD project, see sources **24-25**.

16 Machado Rodrigues and Mendes (1994)

- a. Use of licit and illicit drugs, Greater Lisbon. Survey in 1992 of secondary school grades 7, 8 and 9 (and so were aged 12-18). Representative sample of the public schools in Greater Lisbon. Sample size (male) 1 956, (female) 2 150.
- b. Smokers: smoked in the previous 30 days.
- c. Machado Rodrigues (1987) reports a 1987 survey on drug use in students in school years 7, 8 and 9 (aged 12-18 years) in Lisbon Region (capital and outskirts). This survey is presumably comparable with the 1992 survey reported here. Sample size 8 981. Response rate 95%. Results are not presented by sex but, overall, the prevalence of smoking during the preceding month was 25.3%.
- d. This survey is comparable with the national surveys of 1989 and 1995, see source **15**.

17 Manninen (1997) stating the source as “Barros & *al* 1995” (no further details)

- a. Survey of secondary schools “from each district”. Sample size 16 013.

18 Azevedo *et al* (1999)

- a. Survey of seven of the eleven secondary schools in Porto, carried out in March-May 1996. Sample size 2 974.
- b. Smokers marked as frequency *: smoked at least one cigarette a day. All smokers: included those who smoked but not every day.
- c. Results by age but not by sex were also given:

Age	Percentage smoking daily
12	2.1
13	3.6
14	9.2
15	10.6
16	16.4
17	20.8
18	23.5
19	19.9

19 de Vries (2002), de Vries *et al* (2003)

- a. Part of the European Smoking prevention Framework Approach (ESFA). Longitudinal study in one experimental district (83 classes in 14 schools) and three control districts (75 classes in 11 schools). A single school grade was selected, giving an average age of 13.5. Results refer to the baseline survey, carried out in the autumn term of 1998. Pupils were informed of confidentiality, then completed questionnaires in class with teachers present, and forms were then sealed in envelopes. Sample size 3 034.
- b. Table 4 shows approximate ages corresponding to the selected school grade.
- c. Smokers marked as frequency *: smoked daily. Regular smokers: smoked weekly.

20 Fraga *et al* (2006)

- a. Survey of private and public secondary schools in Porto, carried out in 2003-2004. Students aged 13. Sample size (boys) 984, (girls) 1 052. Response rate 78%.
- b. Smokers marked as frequency *: smoked at least one cigarette a day.
- c. Among 13-year-olds, sexes combined, 1.8% smoked occasionally (less than daily). Sex-specific data not available.

21 Lacerda and Fonseca Cardoso (2014)

- a. Survey of public high schools in Porto, carried out in May 2004. Survey in class using self-completed questionnaires. Sample size 1 005.
- b. All smokers: included those who smoked but not every day.
- c. Lowest age group is 11-19.

22 Damas *et al* (2009)

- a. Survey of four secondary schools in Porto, carried out during 2004/2005, to assess students' knowledge of information about and harms from smoking. Survey in school class using self-completed questionnaires. Sample size 1 770.
- b. All smokers: undefined.
- c. Lowest age group is 11-21.

23 Ferreira and Torgal (2010)

- a. Survey of five public secondary schools in Porto, carried out in 2005. Survey in school class using self-completed questionnaires. Anonymity assured to the participants. Age range 15-19 years. Sample size (girls) 405, (boys) 275.
- b. All smokers: undefined.
- c. Smokers smoked between 2 and 25 cigarettes/day (average 8.15 cigarettes/day), with no significant difference between boys and girls.

24, 25 Hibell *et al* (1997, 2000, 2004, 2009, 2012), Feijão and Lavado (2003), Feijão *et al* (2012)

- a. Nationally representative surveys forming part of ESPAD (European School Survey Project on Alcohol and Other Drugs). Schools in Azores and Madeira islands excluded. Surveys of pupils in state school grades 10-12 (1995), 8-10 (1999) or 7-10 (2003, 2007 and 2011). Results given as Source 24, which are in the format used internationally, refer to those born within a target year, thus age 15-16 at the time of the survey, while results for the whole age range surveyed are given as source 25 (see note b). Around 85% of 15-16 year-olds were still in school in each survey year, with around 85% in the surveyed grades. Anonymous questionnaire completed and sealed in an envelope by the pupil, in class. Teachers present, but discouraged from walking round the classroom.

Date	Sample size		Participation rate (%)			Target year of birth	Average age
	Males	Females	Schools	Classes	Pupils		
Mar 1995	852	1 181	100	100	92	1979	–
Mar 1999	1 672	1 937	100	100	95	1983	15.2*
May 2003	1 389	1 557	95	98	96	1987	15.9
May 2007	1 471	1 670	100	95	96	1991	15.9
May 2011	825	1 140	90	90	91	1995	15.9

* : 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. For 2003-2011, results for the entire samples, age 13-18, were reported as the ECATD surveys (Estudo sobre o Consumo de Álcool, Tabaco e Droga, em alunos do ensino público), and are shown as source 25 (Feijão and Lavado (2003), Feijão *et al* (2012)). The sample sizes were:

**Total sample
(ages 13-18)**

2003	16 500
2007	15 000
2011	13 000

- c. Smokers marked as frequency *: smoked 1 or more cigarettes per day in the previous 30 days. All smokers: smoked in the previous 30 days.
- d. These surveys are a continuation of sources **15** and **16**.
- e. To avoid duplication, only source **24** is used in the Supplement tables.
- f. Consumption category estimation based on 1-5, 6-10, 11-20, 21+ cigarettes/smoker/day.

26 Currie et al (2000, 2004, 2008, 2012)

- 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
1998	14.2	16.1	1 259	1 245
2002	14.2	16.1	964	802
2006	13.6	15.6	1 335	1 383
2009	13.5	15.5	1 300	1 553

- b. Number of cigarettes per smoker per day (Table 5, 1998 only) is derived from the median number smoked per week.
- c. Smokers marked as frequency *: smoked daily. Regular smokers: smoke once a week or more. All smokers: includes those smoking less than once a week.

27 Precioso et al (2012)

- a. Nationally representative sample (including Azores and Madeira) of students in school grades 5 to 12 in the academic year 2008/2009. Stratified sampling by region. Cluster sampling within region by school type (country or city) and class (two classes per school). Sample size (males) 4 060, (females) 4 704. The questionnaire was based on the HBSC questionnaire (see source **26**) and one other. Results are available for ages 11 (not presented here), 13 and 15, as for HBSC.
- b. Regular smokers: smoked at least one cigarette per week.

28 Gallus et al (2012)

- 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. One section of the survey involved asking to see the subject's most recently bought pack of cigarettes or hand-rolling tobacco.
- b. For Portugal the sampling method and response rate were not specified. Sample size 1 000. Age range 15+.
- c. Among smokers (sexes combined), the type of pack bought most recently was:

Pack type	Proportion (%)
Cigarettes, 20-pack	97.5
Cigarettes, 10-pack	0.3
Hand-rolling tobacco	2.2
Other	0.0

- c. Use of smokeless tobacco was reported by 0% of men and 0% of women.
- d. Cigarettes per smoker relates to all smokers rather than regular smokers.

29 Eurostat (2005, (accessed August 2007))

- a. European Community Household Panel (ECHP), a longitudinal survey, centrally designed and co-ordinated by the Statistical Office of the European Communities (Eurostat). The survey started in 1994 (1996 in Finland) and smoking was first included in 1998. Participants were age 15+ and living in private households. In each wave, the original participants were contacted again (except if previously refused or incapacitated), and new respondents were also added.

Year	Number of respondents	Original respondents remaining (%)
1998	11 412	76
1999	11 250	72
2000	11 054	67

(Sample size not available for 2001.)

- b. Regular smokers: smoked daily at the time of the survey.
- c. Highest age groups are 75-84 and 85+.
- d. Consumption category estimation based on two categories, 1-19 and 20+ cigarettes/smoker/day, and resulting figures should be regarded with caution.

30 Cardoso and Plantier (2008)

- a. A study in 2008 of the impact of Law No. 37/2007, an act aiming to limit involuntary exposure to tobacco smoke which came into force on 1 January 2008. Nationally representative sample of the population aged 15+ in continental Portugal, stratified by region. Sample size 5 222. Response rate 83%. See also source 35.
- b. Calculation of cigarettes per person based on prevalence of smoking (daily and non-daily) so may overestimate.

31 Cunha Filho (2005), Balsa *et al* (2008, 2013, 2014)

- a. Inquérito Nacional de Saúde sobre o Uso de Substâncias Psicoactivas (National Health Survey on the Use of Psychoactive Substances) commissioned by Instituto da Droga e da Toxicoddependência (Institute for Drugs and Drug Addiction). Nationally representative samples using stratified cluster sampling. Weighted results presented.

Year	Sample size	Regions studied	Age range
2001		Portugal	15-64
2007	12 202	Continental Portugal and islands	15-64
2012	6 817	All regions including Azores and Madeira	15-74

- b. Smokers: (2001) smoked in the last year, (2007) currently used tobacco, (2012) smoked in the last month.
- c. Assumed extensions to age distribution for percentage smokers are shown in the extended version of Table 4 in the Excel tables workbook.

32 Pereira *et al* (2013)

- a. Inquérito Nacional sobre Asma (INAsma, National Asthma Survey). A representative sample of continental Portugal and the regions of Madeira and Azores carried out in March-May 2010. Stratified sampling; interviews by telephone. Response rate 50%. Sample size 6 003. Results weighted to the 2001 population distribution.
- b. Smoker: smoked at least one cigarette a day or one cigar a week for one year and smoked in the month before the survey.

33 Feijão (2011a, 2011b)

- a. Inquérito Nacional em Meio Escolar (INME, National Survey in Middle School). A representative sample of students in public schools in all regions of Portugal including Azores and Madeira. Stratified sampling by region. Interviews carried out in class in May 2011. Sample size (3° Ciclo) 33 000, (Ensino Secundário) 32 000.
- b. Age groups presented in Table 4 are approximate, representing results for students in 3° Ciclo and in Ensino Secundário respectively (see *Additional information (not presented in tables)*, p. 46 below for a description of the education system in Portugal).
- c. Smokers: smoked in the previous 30 days.

34 Nogueira *et al* (2011), Contreiras *et al* (2003)

- a. Survey of the ECOS (Em Casa Observamos Saúde, health observation at home) panel. This panel was initially recruited in 2002 within each health district of continental Portugal, selecting a random sample of telephone land-line numbers. Telephone land-line coverage at that time was estimated at 75% of the population. Tobacco use reported for 2005, 2008 and 2010. Response rates and sample sizes are not available for 2005 and 2008. For the 2010 survey, additional sample households were also identified using mobile phone numbers. Household response rate 86%. Sample size 920 households, 2 327 individuals.
- b. Regular smokers: smoked daily.
- c. Assumed extensions to age distribution for percentage smokers are shown in the extended version of Table 4 in the Excel tables workbook.

35 Nogueira *et al* (2011)

- a. Results of opinion polls carried out in 2006, 2007 and 2010 by Eurosondagem on behalf of the Ministry of Health. Law no. 37/2007, aiming to limit involuntary exposure to tobacco smoke, entered into force on 1 January 2008 (see also source **30**). This survey forms part of that law's requirement for monitoring of tobacco consumption. Sample stratified by region and age group. Telephone interviews.

	Response rate (%)	Sample successfully interviewed
July 2006	87	1 058
March 2007	86	1 048
December 2010	81	1 025

36 Santos and Barros (2004)

- a. Health and Nutrition Survey. Random sample of the residents of Porto in 1999-2000. Subjects recruited by random digit dialling. A single person aged 18 years or more was randomly selected from each household. Face-to-face interviews. Participation rate 70%. Sample size (males) 629, (females) 1 015. Results age-adjusted to the European standard population.
- b. Calculation of cigarettes per person based on prevalence of smoking (daily and non-daily, product unspecified) and number of cigarettes per daily smoker, so may overestimate.
- c. Assumed extensions to age distribution for percentage smokers are shown in the extended version of Table 4 in the Excel tables workbook.

Additional information (not presented in tables)

Smoking in Azores

Carreira *et al* (2012) cites Santos *et al* (2008) reporting a survey in 2004 of 10 000 people in Azores, representing the general population aged 18-65. Prevalence of smoking (regular or occasional) was:

Sex	Prevalence of smoking (%)
Males	42.5
Females	18.5

The education system in Portugal

School year (grade)	Age (approximate)	Description	
1	6-7	1º Ciclo (1 st Cycle)	Ensino Básico (Basic Education)
2	7-8		
3	8-9		
4	9-10		
5	10-11	2º Ciclo (2 nd Cycle)	
6	11-12	3º Ciclo (3 rd Cycle)	
7	12-13		
8	13-14		
9	14-15		
10	15-16	Ensino Secundário (Secondary Education)	
11	16-17		
12	17-18		

Sources: http://en.wikipedia.org/wiki/Education_in_Portugal;
<http://www.classbase.com/Countries/Portugal/Education-System>

These details relate to the categories and grades in use now. Different grades seem to have been in use in earlier years e.g. see sources 15, 16 and 22.

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