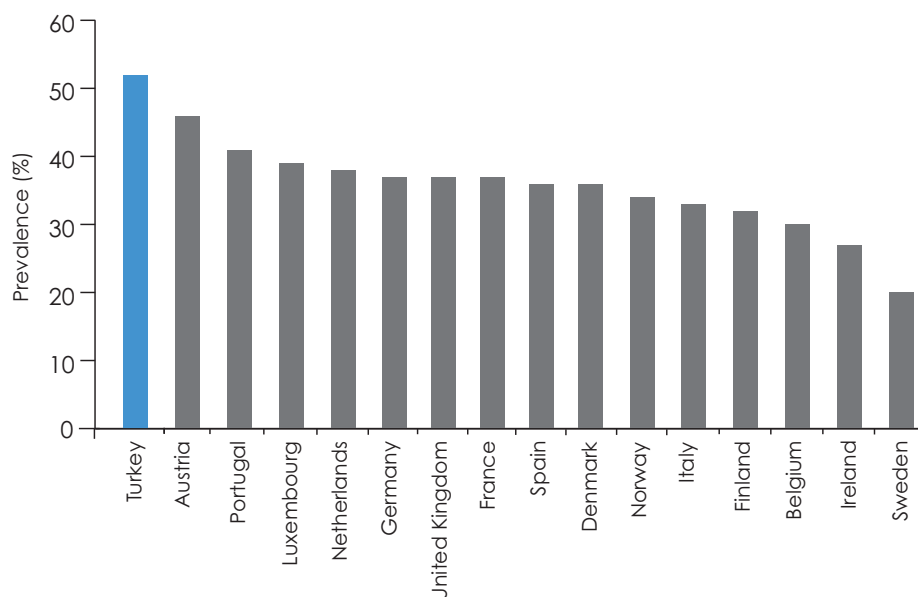


# The Economics of Tobacco and Tobacco Taxation in Turkey

Yürekli A, Önder Z, Elibol M, Erk N, Cabuk A, Fisunoglu M, Erk SF, Chaloupka FJ

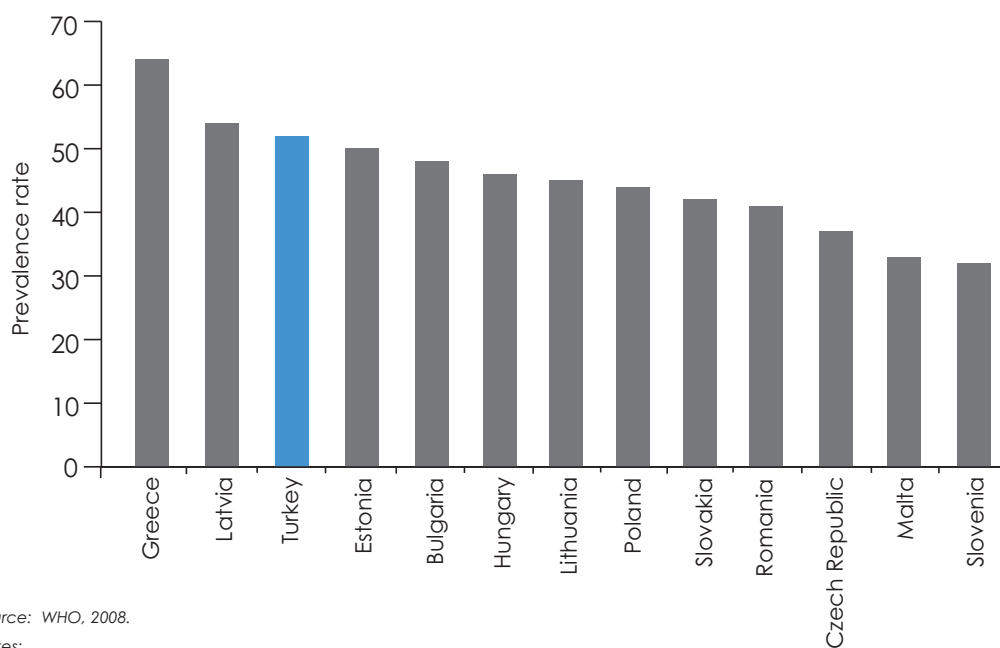
## Annex

**Graph A1: Age standardized prevalence of any smoking (%), males, Turkey compared to Western European countries**



Source: WHO, 2008.

**Graph A2: Age standardized prevalence of any smoking (%), males, Turkey compared with selected European Union Member States<sup>a</sup>**

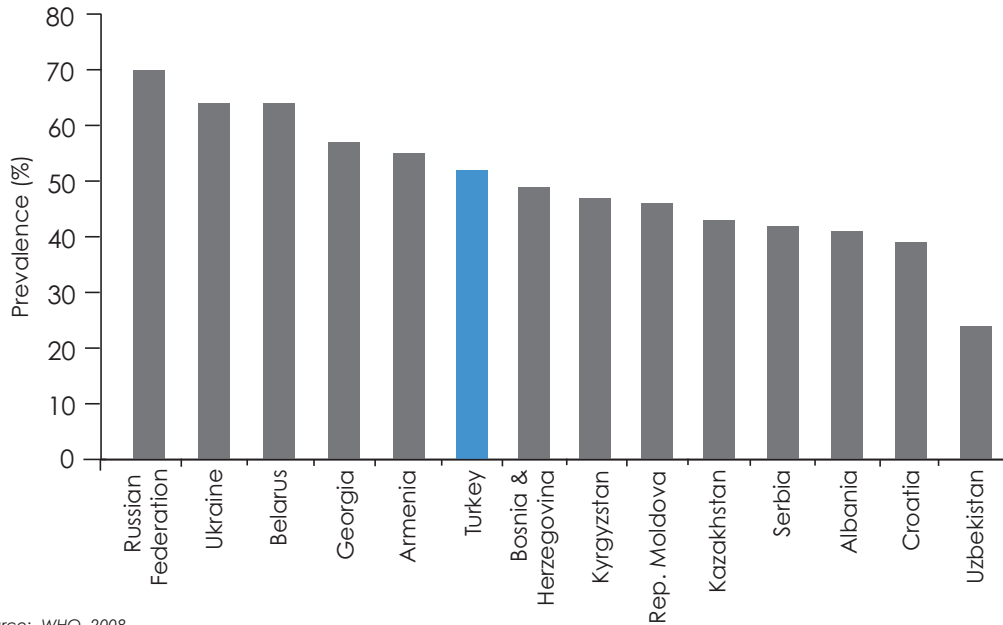


Source: WHO, 2008.

Notes:

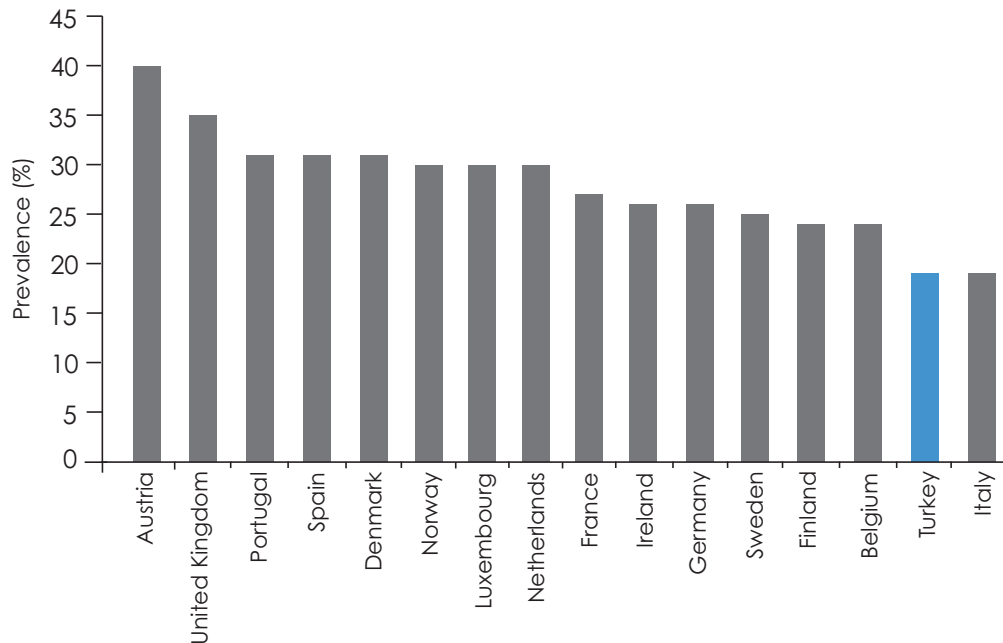
<sup>a</sup> Greece became an EU member in 1981, the other countries were admitted after 2004. Turkey received EU candidate status in 2004 and is currently negotiating membership.

**Graph A3: Age standardized prevalence of any smoking (%), males, Turkey compared to selected WHO European Region countries**



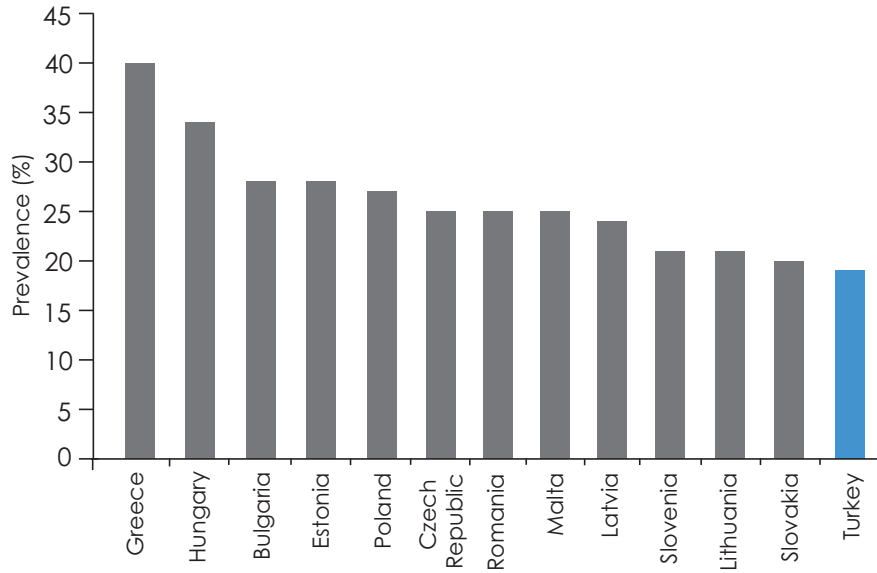
Source: WHO, 2008.

**Graph A4: Age standardized prevalence of any smoking (%), females, Turkey compared with Western European countries**



Source: WHO, 2008.

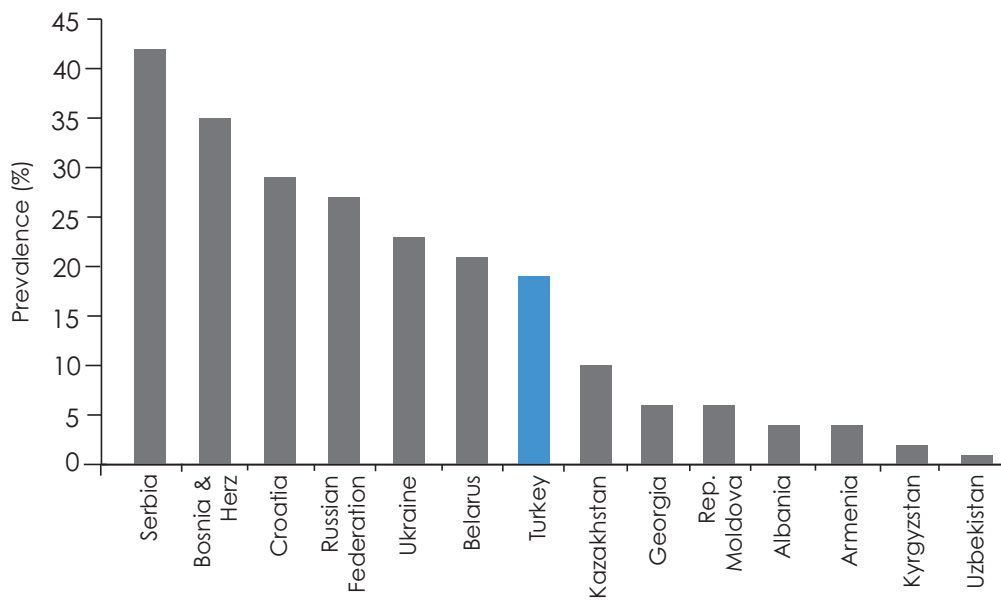
**Graph A5: Age standardized prevalence of any smoking (%), females, Turkey compared with selected European Union Member States<sup>a</sup>**



Source: WHO, 2008.

<sup>a</sup> Greece became an EU member in 1981, the other countries were admitted after 2004. Turkey received EU candidate status in 2004 and is currently negotiating membership.

**Graph A6: Age standardized prevalence of any smoking (%), females, Turkey compared to selected WHO European Region countries**



Source: WHO, 2008.

**Table A1: Smoking prevalence rates of adults (ages 15 to 65+ years) in Turkey, National Household Survey, 2003**

Smoking behavior (%)			
	Smoking everyday	Not everyday	Never smoked
Total	27.4	3.9	66.2
<b>Gender</b>			
Male	43.8	4.1	30.0
Female	11.6	3.6	74.8
<b>Rural/Urban</b>			
Urban	28.9	4.1	51.0
Rural	23.9	3.3	57.1
Smoking behavior (current users) by age and residence (%)			
Age groups	All users	Urban	Rural
15-24	25.4	25.6	24.8
25-34	40.3	42.3	34.4
35-44	39.6	40.3	37.7
45-54	32.3	34.0	28.3
55-64	24.7	26.6	21.3
65+	10.3	9.8	10.9

Source: National Household Survey, 2003. Number of respondents = 11,186

**Table A2: Smoking prevalence rates of adults (18+) in Turkey by geographical region characteristics**

Smoking behavior (%)				
Regions	Smoking everyday	Not everyday	Never smoked	N
West	32.81	2.01	65.18	4,170
South	28.44	1.57	69.99	1,466
Central	35.16	2.21	62.64	1,903
North	29.89	1.70	68.41	1,355
East	31.81	0.87	67.32	2,292

Source: National Household Survey, 2003. N = 11,186

**Table A3: Average cigarette consumption per day and average age of smoking initiation**

	Number of cigarettes smoked per day	Starting age of smoking (years)
Total	17.05	19.24
<b>Gender</b>		
Male	19.40	18.44
Female	12.16	21.00
<b>Rural/Urban</b>		
Urban	16.50	19.44
Rural	18.01	18.92
<b>Age groups</b>		
18-24	15.07	16.15
25-34	16.03	18.47
35-44	17.78	20.09
45-54	19.73	21.47
55-64	20.33	24.38
65+	17.17	25.24
<b>Regions</b>		
West	16.86	19.39
South	16.73	19.87
Middle	18.04	18.93
North	16.45	19.66
East	16.97	18.66

Source: National Health Survey, Basic Findings, Table 4.10

**Table A4: Smoking prevalence rate and quantity of cigarettes smoked by occupation in 1996**

Occupation	Smoking prevalence		Average number of cigarettes smoked per day
	Ever (%)	Current (%)	
Physicians	62.0	43.9	15.1 ± 10.6
Teachers	61.8	50.8	12.3 ± 9.8
Journalists	70.4	63.9	16.2 ± 9.0
Sportsmen	43.1	34.9	9.6 ± 7.8
Artists	60.8	46.2	13.6 ± 9.1
Parliamentarians	57.6	27.1	22.9 ± 12.7
Women with little children	36.9	30.2	19.3 ± 8.4

Source: Bilir, Dogan and Yildiz (1997), Table IV.1.4, page 17.

**Table A5: Distribution of inpatients in hospitals by tobacco-related diseases in Turkey, 2000**

Rank by patient days	ICD Code	DISEASES	Discharged (000)	Deaths	Patient-days (000)	Hospitalized patients (000)	% of patients	% of deaths
		All diseases	4,903	121,865	29,720	5,025		
3	A93	Bronchitis, emphysema and asthma	156	1,886	1,170	158	3.1%	1.5%
6	A84	Other forms of heart disease	161	11,130	1,028	173	3.4%	9.1%
9	A96	Other diseases of respiratory system	143	2,896	946	146	2.9%	2.4%
10	A85	Cerebrovascular disease	89	35,860	788	124	2.5%	29.4%
11	A83	Ischemic heart disease	134	5,289	744	139	2.8%	4.3%
17	A6	Tuberculosis of respiratory system	21	511	586	22	0.4%	0.4%
24	A82	Hypertensive disease	71	1,454	389	72,628	1.4%	1.2%
27	A51	Malignant neoplasm of trachea, bronchus and lung	30	2,034	361	32	0.6%	1.7%
29	A89	Acute respiratory infections	71	568	325	71	1.4%	0.5%
35	A86	Diseases of arteries, arterioles and capillaries	39	1,000	245	40	0.8%	0.8%
65	A95	Emphysema and abscess of lung	10	334	99	10	0.2%	0.3%
76	A50	Malignant neoplasm of larynx	5	178	72	6	0.1%	0.1%
77	A90	Influenza	14	107	68	14	0.3%	0.1%

Source: Ministry of Health Turkey: Total Patients Hospitalized in Turkey by Disease Categories 2000.

**Table A6: Burden of diseases attributed to tobacco smoking 2004**

Disease	Attributed deaths	Attributable YLL	Attributable DALYs	Proportion of Attributable DALYs
Cardiovascular diseases	21,317	274,770	321,237	3.0
COPD	12,902	72,689	150,406	1.4
Lung cancer	10,510	107,075	112,634	1.0
Other cancers	4,681	58,756	62,302	0.6
Other respiratory diseases	2,105	33,387	58,377	0.5
Other	3,185	50,006	226,953	2.1
Total	54,699	596,684	931,909	8.6

Source: Ministry of Health, Burden of Diseases Study, 2004. Notes: YLL= Years of Life Lost, DALYs= Disability Adjusted Life Years. YLLs take into account the age at which deaths occur by giving greater weight to deaths occurring at younger ages than at older ages.

**Table A7: Attributable DALYs of major causes of death as a proportion of total DALYs, 2004**

Causes of Death	Males	Females
Water and sanitation	1.5%	1.6%
Alcohol use	6.8%	1.4%
Low fruit and vegetable intake	4.4%	3.2%
Physical inactivity	4.4%	4.1%
High cholesterol	6.1%	4.2%
Smoking	15.4%	1.2%
High BMI (>30)	6.6%	7.9%
High blood pressure	9.4%	7.8%

Source: Ministry of Health, Turkey, Burden of Diseases Study, 2004

**Table A8: Cigarette production in the world and Turkey (in billion pieces)**

Countries	2000	2002	2004	2006	Share in total in 2006
China	1,699	1,734	1,874	2,022	34.8%
U.S.A.	595	532	494	484	8.3%
Russian Fed.	341	395	383	414	7.1%
Japan	258	249	234	194	3.3%
Indonesia	228	200	214	230	4.0%
Germany	207	213	208	216	3.7%
South Korea	98	94	139	127	2.2%
<b>Turkey</b>	<b>128</b>	<b>132</b>	<b>103</b>	<b>101</b>	<b>1.7%</b>
Netherlands	123	126	115	85	1.5%
U.K.	126	133	100	78	1.3%
Others	1,706	1,765	1,827	1,856	32.0%
Total	5,507	5,572	5,692	5,808	100.0%

Source: ERC (2008)

**Table A9: Retail price, total and excise yield per pack in selected EU states; January 1, 2009**

	Price/pack EUR January 2009	Excise yield EUR per 1000 cigarettes 2009	Total tax % of RP 2009
Poland	1.70	65.00	93.84
Slovakia	2.10	72.00	90.00
Bulgaria	1.48	51.00	85.49
Latvia	2.09	68.00	82.26
France	5.30	170.00	80.39
Czech	2.37	75.00	79.49
Ireland	8.10	249.00	79.26
Portugal	3.40	105.00	78.28
Belgium	4.16	125.00	77.43
Turkey June 2009	1.68	52.21	77.40
Spain	2.50	80.00	77.35
Estonia	2.50	64.00	77.33
Finland	4.40	130.00	76.91
UK	7.16	227.44	76.57
Malta	3.59	110.00	76.20
Germany	4.71	141.00	75.77
Italy	3.60	105.00	75.17
Slovenia	2.20	64.00	74.85
Austria	3.60	104.00	74.50
Hungary	2.35	68.00	74.05
Netherland	4.74	137.00	73.67
Greece	2.80	86.00	73.47
Denmark	4.29	115.00	73.40
Turkey March 2009	1.68	48.81	73.36
Romania	1.74	49.00	72.37
Cyprus	2.82	83.00	72.04
Sweden	5.04	131.00	71.85
Luxembourg	3.20	91.00	70.10
Lithuania	1.45	37.00	67.57

Source: EU Commission Excise Tax data from January 1, 2009 &amp; Authors' estimates for Turkey



**Table A10: Price elasticity of demand for cigarettes by income quintiles, 1994**

Price Elasticity	Income Quintiles					
	Overall	Lowest	2	3	4	Highest
Smoking participation	-0.0272	-0.1228	-0.3228	-0.1086	-0.0240	0.1459
Conditional demand	-0.3855	-0.3437	-0.5751	-0.4494	-0.4078	-0.303
Total price elasticity	-0.4127	-0.4665	-0.8979	-0.5580	-0.4318	-0.1576

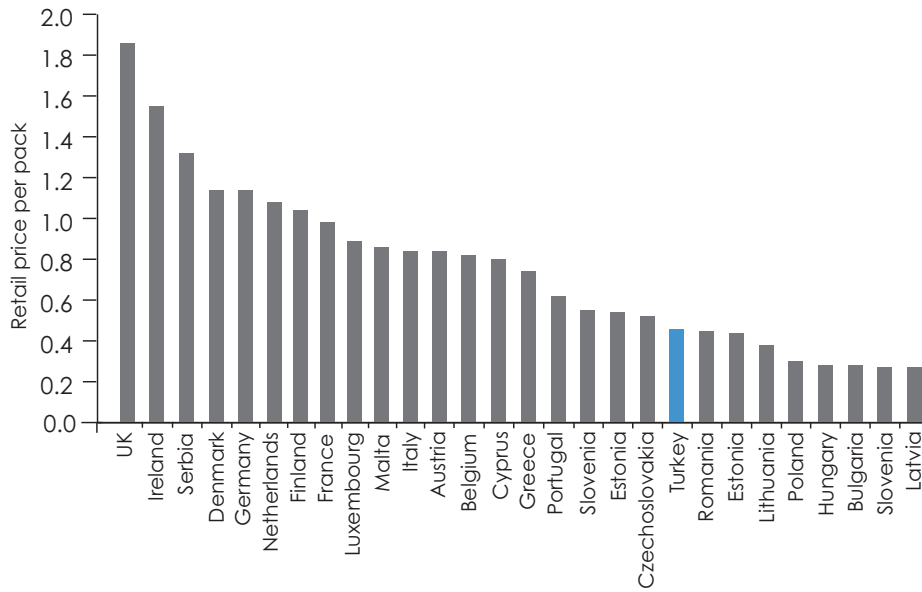
Source: Önder, 2005

**Table A11: Retail prices of selected cigarette brands, pre- and post-March 09 level, (in Turkish Lira, TL)**

Brand	Old Price	March 09 Price
Vogue	5.50	6.00
Kent	4.80	5.00
Pall Mall Silver	3.40	3.60
Pall Mall Superslims	3.50	3.75
Viceroy Short/Long	2.75	3.00
Tekel 2000 Short	4.00	4.10
Tekel 2000 Blue	2.75	3.00
Tekel 2001 Long	3.10	3.30
Tekel 2001 Short	3.00	3.20
Samsun 216 short	2.75	3.00
Samsun 216 short soft pacakge	2.50	2.75
Bahar	2.35	2.65
Meltem	2.60	2.90
Marlboro Long	5.00	5.25
Parliament Long	5.25	5.50
Virginia Slims	5.50	6.00
Muratti	3.75	4.00
L&M long/slims	3.50	3.75
Salem Short	4.80	5.00
Camel	4.40	4.60
Winston Superslims	3.80	4.00
Monte Carlo	2.75	3.00
Anadolu	2.50	2.75
LD short/long	2.50	2.75

Source: Assorted (newspapers, surveys)

**Graph A7: Incentives for smuggling: differences in pre-tax price of a pack of cigarettes in WHO European Region 2007**



Source: Prepared by authors based on EU Commission excise tax data for EU member states