

## Supplementary Tables

Table S1. Waterpipe tobacco data inputs

Variable	Input value			Source
	Jordan	Lebanon	Palestine	
Import duty tax, % of CIF/ex-factory price	0.0	35.1	0.00	WHO 2021 [1]
Specific excise tax per 20g, USD	0.18	0.03	1.72	WHO 2021 [1]
Value added tax, % of retail price	13.8	8.6	13.8	WHO 2021 [1]
Annual imports, trade value, USD	4,447,191	28,076,527	808,859	UN Comtrade 2019 [2]
Annual imports, netweight, kg	909,208	3,042,453	79,760	UN Comtrade 2019 [2]
CIF/ex-factory price per 20g, USD	0.10	0.13	0.20	Annual imports trade value/(netweight*1000/20)
Discount café share, %	3.9	4.3	48.1	Chalak <i>et al.</i> , 2021 [3]
Premium café share, %	37.7	41.4	24.4	Chalak <i>et al.</i> , 2021 [3]
Discount home share, %	21.8	25.8	10.7	Chalak <i>et al.</i> , 2021 [3]
Premium home share, %	36.7	28.5	16.8	Chalak <i>et al.</i> , 2021 [3]
Discount café retail price, USD	3.37	3.50	5.86	Chalak <i>et al.</i> , 2021 [3]
Premium café retail price, USD	7.38	7.92	7.62	Chalak <i>et al.</i> , 2021 [3]
Discount home retail price, USD	0.64	0.64	0.73	Chalak <i>et al.</i> , 2021 [3]
Premium home retail price, USD	1.02	0.78	2.40	Chalak <i>et al.</i> , 2021 [3]
Discount café own price elasticity	-0.335	-1.699	-0.291	Chalak <i>et al.</i> , 2021 [3]
Premium café own price elasticity	-0.674	-2.312	-1.120	Chalak <i>et al.</i> , 2021 [3]
Discount home own price elasticity	-0.915	-1.700	-0.650	Chalak <i>et al.</i> , 2021 [3]
Premium home own price elasticity	-0.601	-1.949	0.196*	Chalak <i>et al.</i> , 2021 [3]
Current use, %	10.9	39.5	12.9	Chalak <i>et al.</i> , 2021 [3]
Illicit (non-tax paid) consumption, % of current use	7.0	25.9	25.0	Online reports [4,5]
Population size aged >15 years	6,851,000	5,114,372	2,960,687	World Bank [6]
Number of annual 20g sessions	361,190,280	1,339,392,106	217,858,689	Current use * Population size * Mean number of waterpipes/day [3] * Mean number of heads/waterpipe [3] * 365.25

CIF: Cost, insurance, and freight; \*set to 0 following peer review

**Table S2.** Tax structures per 20g and market-weighted retail price of 20g of waterpipe tobacco for each simulated scenario, USD

Country	Scenario	CIF price	Import duty	Specific excise	Ad valorem excise	VAT	Margin	Retail price
Jordan	Base	0.10	0.00	0.18	0.00	0.42	2.73	3.43
	Tax is 35.9% of retail price	0.10	0.00	1.32	0.00	0.68	3.48	5.57
Lebanon	Base	0.13	0.00	0.03	0.28	0.30	3.02	3.82
	Tax is 35.9% of retail price	0.13	0.06	2.04	0.00	0.66	5.44	8.38
Palestine	Base	0.20	0.00	1.72	0.00	0.65	2.77	5.34
	Double government revenue from excise	0.20	0.00	4.11	0.00	0.97	2.70	7.98

CIF: costs, insurance, and freight; VAT: Value Added Tax;

**Table S3.** Sensitivity analysis showing the impact of different parameter changes on consumption (C), government revenue from all taxes (G), and premature deaths averted (P), expressed as a percentage relative to the new scenario.

Variable	Jordan			Lebanon			Palestine		
	C	G	P	C	G	P	C	G	P
Cost, insurance, and freight price or ex-factory price +50%	-1.0	-0.6	+1.4	-3.4	-2.0	+1.6	-0.6	-0.3	+1.4
Cost, insurance, and freight price or ex-factory price -50%	+1.0	+0.6	-1.4	+3.6	+2.0	-1.7	+0.6	+0.3	-1.4
Discount café own price elasticity lower 95% confidence interval	-0.4	-0.4	+0.1	-0.3	-0.3	+0.1	-4.8	-4.9	-0.4
Discount café own price elasticity upper 95% confidence interval	+0.5	+0.4	-0.1	+0.4	+0.3	-0.1	+5.4	+5.5	+0.4
Premium café own price elasticity lower 95% confidence interval	-2.4	-2.9	-1.4	-2.3	-2.4	-0.4	-1.7	-1.8	-0.5
Premium café own price elasticity upper 95% confidence interval	+2.5	+3.0	+1.4	+2.3	+2.4	+0.3	+1.8	+2.0	+0.5
Discount home own price elasticity lower 95% confidence interval	-2.9	-2.2	+1.9	-0.9	-0.8	+0.6	-2.7	-2.5	+1.0
Discount home own price elasticity upper 95% confidence interval	+3.8	+3.0	-2.4	+1.1	+0.9	-0.7	+4.1	+3.8	-1.4
Premium home own price elasticity lower 95% confidence interval	-5.2	-4.2	+3.2	-0.9	-0.7	+0.6	N/A	N/A	N/A
Premium home own price elasticity upper 95% confidence interval	+6.3	+5.0	-3.4	+1.0	+0.8	-0.7	N/A	N/A	N/A
Industry over-shift 10%	-3.4	-1.5	+6.0	-12.9	-11.9	+5.2	-1.8	-1.2	+3.4
Industry under-shift 10%	+3.9	+1.7	-6.1	+16.4	+14.9	-5.6	+2.0	+1.3	-3.5

N/A: Not applicable as elasticity artificially set to 0 following peer review

## References

1. World Health Organization. WHO report on the global tobacco epidemic 2021: addressing new and emerging products [online]. Available at: <https://bit.ly/31slvCZ> [Accessed 05 November 2021].
2. United Nations. UN Comtrade Database [online]. Available at: <https://bit.ly/3GGaQVF> [Accessed 28 October 2021].
3. Chalak A, et al. Own-price and cross-price elasticities of demand for cigarettes and waterpipe tobacco in three Eastern Mediterranean countries: a volumetric choice experiment. *Tobacco control*. 2021. Epub 2021/07/02. doi: 10.1136/tobaccocontrol-2021-056616
4. Oxford Economics. Levant Illicit Tobacco 2019 [online]. Available at: <https://bit.ly/3dBmXt0> [Accessed 17.08.22].
5. Philip Morris International. Israel's COVID-19 measures have a promising impact on illicit cigarette trade [online]. Available at: <https://bit.ly/3dpKvkf> [Accessed 17.08.22].
6. World Bank. Data. Population, total [online]. Available at: <https://bit.ly/3pL8n61> [Accessed 28 October 2021].