Appendix A Policy Module Parametrization of Taiwan SimSmoke

	Year																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Taxation		-	<u>.</u>	-	-	•	<u>.</u>		-	-		•	•	•	-	-	-
Average retail price per 20-cig pack [NTD]	40.9	40.9	40.9	50.6	50.6	60	60	65	65	70	70	70	70	75	75	80	80
Taxes per 20-cig pack [NTD]	11.8	11.8	11.8	16.8	16.8	16.8	16.8	21.8	21.8	21.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8
Consumer Price Index	89.8	89.8	89.6	89.4	90.8	92.9	93.5	95.2	98.5	97.7	98.6	100	101.9	102.7	104	103.7	105
Clean air laws																	
Ban in all workplaces	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	95%	95%	95%	95%	95%	95%	95%
Ban in indoor offices only	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ban in health facilities, universities, and government facilities (2 of 3)	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Ban in all indoor areas of restaurants	50%	50%	50%	50%	50%	50%	50%	50%	50%	75%	75%	75%	75%	75%	75%	80%	80%
Ban in pubs and bars	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bans in other places	50%	50%	50%	50%	50%	50%	50%	50%	50%	100%	100%	100%	100%	100%	100%	100%	100%
Enforcement [0-10]	6	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8
Mass media campaigns																	
Well-funded media/tobacco control campaign	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%
Moderately funded media/tobacco control campaign	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Low funded media/tobacco control campaign	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table A-1 Full parameterization of the Policy Module in Taiwan SimSmoke.

Marketing bans

U U																	
Ban on both direct																	
advertising and indirect																	
marketing strategies	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
(brand stretching,	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
sponsorship, and free																	
samples)																	
Total ban on direct																	
advertising on all forms	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%
of media																	
Partial ban on direct																	
	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
advertising																	
No restrictions	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Enforcement [0-10]	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8
Health warnings	•	-		-	-		•		-	-	•	•	•		-	-	
Very strong health																	
warnings	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Strong health warnings	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%
Mild health warnings	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
No warnings	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Youth access																	
enforcement																	
Vending machine ban	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Self-service ban	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Strongly enforced	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Well enforced	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%
Low enforced									100%								
	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Community based	50%	50%	50%	50%	50%	50%	50%	50%	50%	70%	70%	70%	70%	70%	70%	70%	70%
publicity campaign																	
Merchant awareness	50%	50%	50%	50%	50%	50%	50%	50%	50%	70%	70%	70%	70%	70%	80%	80%	90%
campaign	5070	5070	5070	3070	3070	5070	5070	5070	5070	/0/0	7070	7070	/0/0	/0/0	0070	0070	2070
Cessation -																	

Cessation -

pharmacotherapy

NRT [2=provided without Rx; 1=provided with Rx; 0=otherwise]	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Bupropion and Varenicline [2=provided without Rx; 1=one provided with Rx; 0=otherwise]		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cessation - financial coverage [0=None; 1=Yes in some; 2=Yes in most]																	
Primary care facilities	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hospitals Offices of health professionals	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Community Other	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cessation – quit-line	-	-		-	1		1	1	-	-	1	- -	1	1	-	-	1
Quit-line [0=None; 1=Yes]	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Quit-line type [0=None; 1=Passive; 2=Active; 3=Active with follow up]	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Free NRT [2=Yes; 1=No]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cessation - brief		-								-							
interventions																	
Health care provider involvement [0=None; 1=required or adequately subsidized intervention with follow	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2

up by health care

providers and with

training and reminder

systems]

Appendix B Taiwan SimSmoke sources of data

Table B-1 Full list of data sources used in Taiwan SimSmoke.

Module	Data	Source							
	Population	Department of Household Registration, Ministry of the Interior, Taiwan. Statistics 2017 [Available from: http://www.ris.gov.tw/en/web/ris3-english/history							
Population	Fertility Rates	Department of Household Registration, Ministry of the Interior, Taiwan. Statistics 2017 [Available from: http://www.ris.gov.tw/en/web/ris3-english/history							
	Mortality Rates	Department of Household Registration, Ministry of the Interior, Taiwan. [Demographics] 2017 [Available from: http://www.ris.gov.tw/346							
	Smoking Rates by	Chang Y-H, Fu Y-C. 2000 Taiwan Social Change Survey (Round 4, Year 1): Interpersonal Relations, Leisure, Family, Life Experiences, Mental Health (C00108_2)[Data file]. Taipei City (Taiwan): Survey Research Data Archive, Center for Survey Research, Research Center for Humanities and Social Sciences, Academia Sinica, 2001							
	Age, Gender, and Smoking Status	Wen C-P, Levy DT, Cheng T-Y, et al. Smoking behaviour in Taiwan, 2001. Tob Control 2005;14(Suppl I):i51-i55. doi: 10.1136/tc.2004.008011							
		GBD 2015. Global Burden of Disease Study 2015 Smoking Prevalence 1980-2015. Seattle (United States of America): Institute for Health Metrics and Evaluation (IHME), 2017							
	First Year Cessation Rates by Age and Gender	GBD 2015. Global Burden of Disease Study 2015 Smoking Prevalence 1980-2015. Seattle (United States of America): Institute for Health Metrics and Evaluation (IHME), 2017							
Smoking		Gilpin EA, Pierce JP, Farkas AJ. Duration of Smoking Abstinence and Success in Quitting. J Natl Cancer Inst 1997;89(8):572-76. doi: 10.1093/jnci/89.8.572							
	Relapse Rates by	Hughes JR, Keely J, Naud S. Shape of the relapse curve and long-term abstinence among untreated smokers. Addiction 2004;99(1):29-38. doi: 10.1111/j.1360-0443.2004.00540.x							
	Age, Gender, and Years Since Quitting	U.S. Department of Health and Human Services. The Health Benefits of Smoking Cessation - a report of the Surgeon General. DHHS Publication No (CDC) 90-8416. Rockville (United States of America): U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health, 1990							
	Relative Risks of Mortality from Smoking by Age and Gender	Wen C-P, Tsai S-P, Chen C-J, et al. The mortality risks of smokers in Taiwan Part I: cause-specific mortality. Prev Med 2004;39(3):528-35. doi: 10.1016/j.ypmed.2004.02.010							
		Levy DT, Wen C-P, Cheng T-Y, et al. Increasing taxes to reduce smoking prevalence and smoking attributable mortality in Taiwan: results from a tobacco policy simulation model. Tob Control 2005;14(suppl 1):i45-i50. doi: 10.1136/tc.2003.005660							
	Taxation	Directorate-General of Budget, Accounting and Statistics, Executive Yuan, Taiwan. Consumer Price Index 2017 [Available from: https://eng.stat.gov.tw/ct.asp?xItem=12092&ctNode=1558∓=5							
	Clean air laws								
Policy	Mass media campaigns								
	Advertising bans	Tobacco Control Reports annually released by the Health Promotion Administration Public Health Experts, Scholars, and Anti-Smoking Non-Governmental Organizations in Taiwan							
	Youth access enforcement								
	Cessation								

Appendix C Taiwan SimSmoke Key Assumptions and Limitations

Key Assumptions	Limitations
Dynamic Simulation Model	E-Cigarette Use Not Considered
Yearly Time Step	Constant Mortality Rates
Estimates by age and gender	Net Migration Not Considered
First-Order Markov Processes	Consumption Not Considered
Population divided in Current, Never, and Former Smokers by Years of Cessation	No Taiwan Data available for Yearly Cessation Rate, Relapse Rate, and Percentage of Former Smokers by Years of Cessation
Tobacco Control Policies affect Cessation and Relapse Rates	Smuggling and Duty Free Purchase Not Considered
Smoking Attributable Mortality is estimated from Relative Risks	
No Formers Smokers before age 30	

Table C-1 Taiwan SimSmoke Assumptions and Limits.