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AFTA and Tobacco

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Research Objectives

General:

- gain understanding of the impact of global trade on health
- make fair assessment of this impact to prevent the use of public health advocates for political ends
 - such as justifying unwarranted economic protectionism (used to protect state-owned monopolies, e.g.)

Specific:

- provide recommendations to help public policy makers decide on tobacco tariffs under AFTA treaty

Research Questions (1)

How will the tobacco products market change if tobacco tariffs are eliminated?

- **price (both foreign and domestic cigarettes)**
- **brands (are domestic and foreign brands substitutes?; what is the implication for poverty of switching to more expensive brands?; will brand proliferation increase the market?)**
- **industry marketing activities**
- **industry investment strategies (concentration, specialization)**
- **incentives for smuggling (may decrease)**

Research Questions (2)

How will the tobacco products market change if tobacco tariffs are eliminated ? (continued)

- **smoking prevalence**
- **smoking intensity**
- **social costs of smoking**
- **smoke related deaths**
- **smoke related disabilities**
- **impact on tobacco farmers**
- **impact on government budget (can be both negative and positive, but no net impact on the economy)**

Methodology Design

Calculation of price change (1)

Price of both imported and domestic brands is expected to decrease:

In imported brands due to tariff elimination and due to increased competition among imported brands

In domestic brand due to more competitive pressures from foreign brands

Simplifying assumption (= limitations): both foreign and domestic cigarette prices will decline by the same % amount

If data exist (time series of domestic and foreign prices with at least 13 observations), use regression analysis to estimate the exact relationship between the price of foreign and domestic cigarette brands, and their relationship to tariffs

Methodology Design

Calculation of price change (2)

A possible scenario:

Indonesia has 15% tariff

Tariff is added to the value P (determined at the customs): the product will leave the customs with price = $1.15 * P$

Other taxes and retail margin (S) is also added as % at the top of this price. The final price for imports is $1.15 * P * S$

Without tariffs, the final price for domestic products is $P * S$

What is % decline in price after tariff elimination?

$$(1.15 * P * S - P * S) / 1.15 * P * S = 0.15 / 1.15 = 0.13$$

There is 13% decline in price.

Methodology Design

Calculation of price change (3)

Sensitivity analysis:

Indonesia has 25% tariff

Tariff is added to the value P (determined at the customs): the product will leave the customs with price = $1.25 * P$

Other taxes and retail margin (S) is also added as % on top of this price. The final price for imports is $1.25 * P * S$

Without tariffs, the final price for domestic products is $P * S$

What is % decline in price after tariff elimination?

$$(1.25 * P * S - P * S) / 1.25 * P * S = 0.25 / 1.25 = 0.2$$

There is 20% decline in price.

Taxes for imported and domestic cigarettes (1)

Most countries have different tax structure for local and imported cigarettes

Cambodia

Local cigarettes:

10% excise tax (ex-factory price) +
10% VAT (ex-factory price with excise tax) + 3
% public tax (ex-factory price with excise tax
and VAT)

This is **24.6%** of factory price, but **19.8%** of retail price

Taxes for imported and domestic cigarettes (2)

Cambodia (continue)

Imported cigarettes:

7%, 15%, 35% import duty (CIF value = costs + insurance + freight) +
10% excise tax (CIF with import duty) +
10% VAT (CIF with import duty and excise tax) + 3 % public tax (CIF with import duty and excise tax and VAT)

This is 33%, 43%, 68% of CIF, but
25%, 30%, 41% of retail price

Taxes for imported and domestic cigarettes (3)

Malaysia

Local cigarettes:

excise tax 49 RM/kg + 25% sales tax (factory value + excise tax)

Imported cigarettes:

import duty 216 RM/kg + 25% sales tax (factory value + import duty)

Imported tobacco leaves exempt from tax for licensed manufacturers

⇒ local cigarettes have the same tax treatment independent of being made with domestic or imported material

Exported cigarettes/tobacco are not taxed

Taxes for imported and domestic cigarettes (4)

Thailand

Local cigarettes:

Excise tax 75% of retail price (was 55% in 1990)

- VAT (sale tax) 7 %
- Earmarked tax 2%
- Municipal tax

Imported cigarettes:

Import duty is 5% of value (was 30% in 1990)

Methodology Design

Calculation of demand change (1)

Lower tariffs may lead to higher cigarette consumption due to an increase in both supply and demand

Higher demand due to:

- lower prices
- more advertising, direct and indirect (due to higher competition)
- brand proliferation
- targeting youth and women to expand the market
- foreign cigarettes are often advertised and perceived as less harmful compared to domestic; association with status

Higher supply due to:

- superior efficiency in both production and distribution of transnational tobacco firms

Methodology Design

Calculation of demand change – method 1

After calculation of expected price decline, use existing price elasticity estimates to predict increase in consumption (if price elasticity does not exist for your country use range of estimates from countries in the region; this is a limitation)

Possible scenario:

10% price decrease will cause 4 – 6% increase in consumption (adult prevalence will increase by 2-4%, youth prevalence will increase by at least 6.5%; smoking intensity may also increase)

Sensitivity analysis

Methodology Design

Calculation of demand change – method 2

1. Estimate an increase in imported market share (apply regression analysis: imported market share = price of domestic brands + import tariffs (or prices of imported cigs) + GDP {+ advertising expenditures on foreign brands + advertising expenditures on local brands})
2. Apply the elasticity estimates based on Taiwan experience: $0.025 * \% \text{ increase in imported market share} = \text{increased per capita cigarette consumption}$

Methodology Design

Calculation of demand change – method 3

If data available, estimate demand change using
regressional analysis:

Possible model (using yearly or quarterly data):
consumption = price + tariffs level + tobacco
control measures + GDP + lagged consumption

OLS result will be biased, need to apply 2SLS (due to
lagged consumption) and AR(1) correction. Also
test for spurious regression (DF test).

Methodology Design

Calculation of the change in mortality

Assumptions

1. smoking prevalence will be stable over time (after the increase caused by lower tariffs)
2. all deaths after age 70+ are not attributable to tobacco (this makes the estimate conservative)
3. there is a direct relationship between lung cancer mortality and tobacco mortality due to other diseases, and between lung cancer mortality and DALY (disability adjusted life years)

Methodology Design

Calculation of mortality – method 1

(based on TCDC, Ch. 2)

1. obtain additional # of cigarettes consumed per an adult smoker
2. calculate additional lung cancer mortality per 100,000 among the 35-69 age group using formula: $0.0248 * \# \text{ of additional cigs per adult}$
3. calculate additional tobacco related deaths assuming that total deaths are 3-times as large compared to deaths caused by lung cancer: $3 * 0.0248 * \text{no of additional cigs per adult}$
4. calculate additional DALY lost: $36 * 3 * 0.0248 * \text{additional no of cigs per adult}$

Methodology Design

Calculation of mortality – method 2

(based on US CDC estimates)

1. Estimate additional number of **adult** smokers who will die from smoking: # of new adult smokers * 0.22
2. Estimate additional number of **youth** smokers who will die from smoking: # of new youth smokers * 0.32

Methodology Design

Calculation of net economic loss

Net loss = benefits – costs

Benefits = consumer and producer surplus (including utility of smoking and companies profit)

Costs = costs of premature death + indirect morbidity costs + direct morbidity costs

Methodology Design

Calculation of net economic loss (based on US data)

Increase in Long-Term Health Care Expenditure (\$ Millions) due to higher youth smoking prevalence

$$A = \text{Additional \# Youth Smokers} * 0.012$$

Increase in Health Expenditure (\$ Millions) due to higher adult smoking prevalence $B = \text{Additional \# Adult Smokers} * 0.012 * (0.22/0.32)$

Overall Increase in Health Care Expenditure (\$ Millions): $\text{sum}(A + B)$

Other possible research questions (1)

Higher industry concentration and economies of scale (both in manufacturing and marketing) will result in reduced costs: Eliminating tariffs will encourage the building of large capacity processing plants and the export of products to countries lacking their own production capacity

This will also lead to reducing price differences between countries.

Remaining differences will be mostly due to differences in local taxes. This can reduce incentives to smuggle/bootleg cigarettes if tax levels in the region are relatively similar.

Other possible research questions (2)

Trade in raw tobacco

- will there be more trade in raw tobacco?
- what will be implications for tobacco farmers: specialization in certain tobacco quality? Will they be pushed out of the market if quality cannot be met?

Domestic tobacco monopolies (Thailand, Vietnam, others?)

- less protected market, may speed up privatization

Development of new distribution channels and/or their redesign

Data needs (1)

Current and past prices of imported and domestic cigarettes. What does the retail price consist of (whole sale price, tariff, sale tax, excise tax, retail markup, etc)?

Current and past tax structure: What is the base on which the tax is levied? [This information is needed to calculate price increase after tariff is eliminated]

Current and past levels of import/export tariff (expressed as % of final price) on both cigarettes and raw tobacco (and other material for cig. production)

Data needs (2)

**Current and past levels of consumption
(prevalence, per capita consumption)**

% of foreign brands in total cig consumption

**Total number of smokers (by gender, by age
groups)**

**Import – export statistics for both cigarettes and
raw tobacco [to estimate the impact on
brands' share of the market and impact on
local tobacco production after tariff is
eliminated]**

Policy recommendations (1)

Trade barrier removal has both + and - :

- has been linked to faster growth in both productivity and economy in general (leading to better health)
- but, there is a danger for public health in case of harmful products

The presence of effective & comprehensive tobacco control policies, particularly tax and advertising controls, will be essential to safeguard tobacco consumption in the region against lower trade tariffs

Policy recommendations (2)

Economic theory suggests:

- **eliminate tariffs in order to create perfect competition**
- **increase taxes on all tobacco products independent of country of origin**
- **have tax level equal for all types of cigarettes and tobacco products**
- **coordinate taxes across the region to reduce smuggling**

Policy recommendations (3)

Public policy reality

External pressure can eliminate tariffs, but internal pressure from public health advocates may not be strong enough to replace them by higher excise taxes

But, the larger presence of foreign brands and loss of control over national tobacco monopoly may make it politically more feasible for the national governments to adopt anti-tobacco measures

Policy recommendations (4)

Apart from regional tax coordination, it will be important to regulate advertising, promotional activities and sponsorship regionally, because AFTA will also promote free movement of advertising products within the region

It is difficult to argue for keeping tariffs in place as a tool for public health protection if government does not have commitment to adopting tobacco control measures

AFTA's Tariff Scheme

Year	Import Tax (%)
1990	30.5
1995	22.5
1996	20.0
1998	15.0
2000	10.0
2002	5.0
2003	0

Import Tax from non-ASEAN countries = 60%

TTM and TTCs market share in Thailand

Year	TTM	TTCs	Excise Tax(%)	Import Tax(%)
1990	100.0	0.0	55	30.0
1991	99.4	0.6	55	30.0
1994	96.6	3.4	60	22.5
1995	96.7	3.3	62	22.5
1997	95.7	4.3	68	20.0
1998	90.8	9.2	70	15.0
1999	84.6	15.4	71.5	10.0
2001	84.9	15.1	75.0	5.0

Data (1)

Country	Cigarette Imports (sticks in millions)	Cigarette Exports (sticks in millions)	Tobacco Leaf Imports (metric tons)	Tobacco Leaf Export (metric tons)	Cigarette Production (sticks in millions)	Leaf Production (metric tons)	Retail Price		Import Duty	
							Domestic (US\$)	Imported (US\$)	Cigarettes	Tobacco Leaves
Malaysia	1434	11171	19899	408	28390	7260	1.08	1.32	180 LCU/kg	n.a.
Thailand	6854	622	9123	27924	30732	74200	0.90	1.30	60% or 80 LCU/kg, whichever is higher (non-ASEAN countries)	n.a.
Indonesia	562	22504	34248	35658	232467	135578	0.73	0.70	15%	n.a.
Cambodia	n.a.	15	900	470	n.a.	7665	n.a.	0.81	7%	n.a.
Philippines	2739	3627	30687	10086	73156	49479	0.47	0.66	7%	n.a.
Myanmar	n.a.	n.a.	1630	n.a.	2559	47233	n.a.	n.a.	300%	n.a.
Brunei	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.72	1.72	60 LCU/kg, imports from ASEAN countries are duty free	n.a.

Data (2)

Country	Excise Tax	Excise tax/Sales tax higher for imports (Y/N)	Adult Smoking Prevalence	Annual Cigarette Consumption		Price Elasticity	Cost of Smoking	Law on Advertising, Promotions
				per capita (cigarette sticks)	Total (millions of cigarette sticks)			
Malaysia	40 LCU/kg		24.8	1274	18653			Advertising in certain media restricted, advertising to certain audiences banned; advertising in certain locations and advertisement content or design restricted; advertising health warnings/messages required
Thailand	75%		20.6	802	36964			Advertising in certain media restricted; sponsorship or promotion for certain audiences banned; sponsorship advertising of events banned
Indonesia	4%-40% of retail price based on type and volume		33.8	1434	2E+05			Advertising in certain media and in certain locations restricted; advertisement content or design restricted; advertising health warnings/messages required
Cambodia			35.0	n.a.	n.a.			Advertising in certain media restricted; advertising health warnings/messages required
Philippines	0.40-13.44 LCU/pack based on retail price		23.5	1529	72268			Advertising to certain audiences banned; advertisement content or design restricted; advertising health warnings/messages required
Myanmar	125% of ex-factory costs		31.1	n.a.	n.a.			Advertising in certain media restricted
Brunei			20.0	n.a.	n.a.			Not regulated