Track and Trace Break-even Simulation Model: Case of South Africa

NATIONAL WORKSHOP ON TOBACCO TAXATION

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Background

- Illicit trade - threat to the impact of tobacco control and public health.

- Track and trace (T&T):
  - sophisticated systems; products marked with secure identifier,
  - trace products to origin and track along distribution.

- The Protocol to Eliminate Illicit trade in Tobacco Products requires that parties implement an independent T&T system.

- ITP suggests the tobacco industry cover T&T cost; in practice government often pays for it.

- These systems can seem expensive;
  - How much should governments spend to implement T&T?

- Excel-based optimization model, determine break-even cost of T&T:
  - Based on basic economic principles
  - Uses South African data

- Three-step process:

Step 1: Construct the pre-T&T (baseline) scenario

Estimate baseline government and industry revenues

Required data inputs:

- Estimates of the size of the legal and illegal cigarette markets

- Cigarette tax, market and price structure

- Key parameter assumptions:

  Price and cross price elasticity of demand for cigarettes

  Effectiveness of T&T

  Industry strategy

Step 2: Simulate the change in the market caused by an increase in price and a reduction in illicit trade

- Increase in legal market dependent on:
  1. T&T effectiveness
  2. Cross-price elasticity of demand between legal and illegal cigarettes

- Change in price is dependent on industry response: Recovery of loss from illicit revenue

- **Step 3: Optimize T&T solution cost per pack**

  - Use Excel to generate the T&T price per pack so that:

    Revenue from T&T = Total cost of T&T

  - Thus, government breaks even

    Higher price per pack may result in a loss

    Lower price per pack may result in a net gain in revenue

South African case study

Price breakdown and quantity and revenue analysis, pre- & post-T&T

Pre-T&T	Imported	Premium	Popular	Economy	Illicit
Retail price	R45,00	R48,00	R40,00	R28,00	R19,60
Taxes	R24,65	R25,04	R24,00	R22,43	R0,00
Net-of-tax (industry)	R20,35	R22,96	R16,00	R5,57	R19,60

Post-T&T	Imported	Premium	Popular	Economy	Illicit
Retail price	R47,34	R50,64	R42,30	R28,96	R23,17
Taxes	R24,95	R25,39	R24,30	R22,56	R0,00
Net-of-tax (industry)	R22,39	R25,26	R18,00	R6,40	R23,17

Quantity and revenue before (baseline) and after track and trace

Quantity and revenue	Baseline			Post-T&T			Change		
	Total	Legal	Illegal	Total	Legal	Illegal	Total	Legal	Illegal
Consumption (mil packs)	1250,0	837,5	412,5	1123,5	978,2	145,3	-126,5	140,7	-267,2
Gov Revenue (R mil)	R19 981	R19 981	R0	R23 354	R23 354	R0	R3 373	R3 373	N/A
T&T cost (R mil)	R0	R0	R0	R3 373	R3 373	R0	N/A	N/A	N/A
Industry Revenue (R mil)	R20 708	R12 623	R8 085	R14 847	R11 480	R3 367	-R5 860	-R1 143	-R4 718

- In this case the solution price is **R3,45 per pack**.

- In practice, T&T solutions are much cheaper
    - For example, in Kenya the price is **R0,35 per pack**

- If we apply this price to South Africa, government will earn an additional R3 031 mil per annum in revenue.

- XOF 116 000 mil additional revenue per annum.

- **Win-win-win policy:** reduced consumption and illicit trade while generating more revenue.

Merci!

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