



Trade Flows and Trade Policy Analysis

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Partial-equilibrium (PE) trade policy analysis and simulation

Content

- a. Market access analysis with PE modelling
- b. Basic PE model for analyzing welfare changes
- c. Empirical tool for trade policy simulations: SMART

a. Market access analysis with PE modelling

- [Rationale](#) for market access analysis
- [Rationale](#) for PE modelling
 - Advantages
 - Disadvantages

b. Basic PE model for analyzing welfare changes

- Derivation of social welfare function
- Perfect competition
 - Small open economy (SOE)
 - Large country

Social welfare

- Each consumer h has quasi-linear utility function $c_0^h + U^h(c^h)$
- Budget constraint: $c_0^h + p'c^h \leq I^h$
- FOC: $1 = \lambda$ and $U' = \lambda p = p$ (demand for non-numeraire goods is independent of income)
- Demand functions are $c^h = d^h(p)$ and $c_0^h = I^h - p'd^h(p)$
- Welfare is defined as the sum of individual indirect utilities V^h :

$$W(p, I) \equiv \sum_{h=1}^H V^h = \sum_{h=1}^H \{I^h - p'd^h(p) + U^h[d^h(p)]\}$$

- Notice that:
 - $\sum_{h=1}^H I^h = I$ (total income)
 - $\frac{\partial W}{\partial I} = 1$ and (by envelope theorem) $\frac{\partial W}{\partial p} = \sum_{h=1}^H -d^h(p) \equiv -d(p)$
 - $\sum_{h=1}^H \{-p'd^h(p) + U^h[d^h(p)]\} = CS$ (consumer surplus)

Social welfare (ct'd)

- To simplify, let there be only one good subject to specific tariff t
- World price is p^* and $p = p^* + t$
- Numeraire good is freely traded at fixed world price of unity
- Labor is the only factor of production. Each unit of numeraire requires one unit of labor
 - Therefore, $w = 1$ and $WL = L$
- Output of the good subject to the tariff is y . Produced by firms with cost function $C(y)$ and marginal costs $C'(y)$
- Imports $m = d(p) - y$, with $d'(p) < 0$
- Tariff revenue tm is redistributed to consumers
- Consumers are also entitled to profits from import-competing industry
 - Under perfect competition, $py - C(y) = PS$ (producer surplus)
 - Under imperfect competition, $py - C(y) = \pi$ (industry profits)
- Social welfare is then:

$$W(p, I) = W[p, L + tm + py - C(y)] \equiv W(t)$$

Social welfare (ct'd)

- How does social welfare vary with the tariff?

$$dW = \underbrace{\frac{\partial W}{\partial p}}_{-d(p)} dp + \underbrace{\frac{\partial W}{\partial I}}_{=1} dI$$

$$dW = -d(p)dp + d[L + tm + py - C(y)]$$

$$dW = -d(p)dp + mdt + tdm + pdy + ydp - C'(y)dy$$

$$\frac{dW}{dt} = -d(p) \frac{dp}{dt} + m + t \frac{dm}{dp} \frac{dp}{dt} + y \frac{dp}{dt} + [p - C'(y)] \frac{dy}{dt}$$

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_6554

