

Why Enter Tax Sparing Agreement?

“ทำไมจึงมีอนุสัญญาภาษี Tax Sparing”

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Presented at

Department of Economics,

Thammasat University

2nd February 2009

Outline

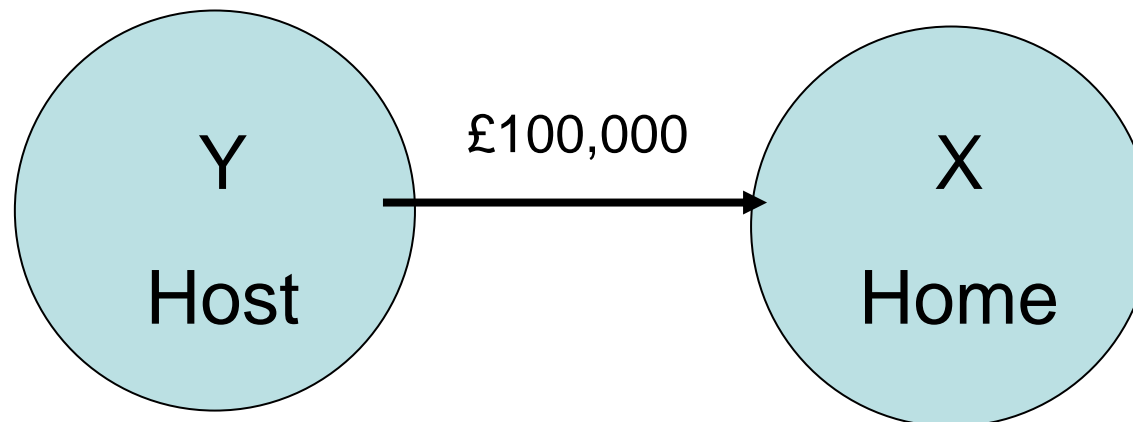
- What is tax sparing?
- Empirical evidence, debates, and literature.
- Motivation
- Models: Cooperative and Non-cooperative approaches
- Numerical example
- Conclusion

Tax Sparing

is a provision specified in a bilateral tax treaty, primarily between source countries (capital-exporting countries) and host countries (capital-importing countries), in which the source country gives an income tax credit to its residential companies for taxes which are spared by the host country as a result of the host country's tax incentive scheme.

Example (1)

- Company A earns income (i.e. interest income) of £100,000 in a host country Y.
- Company A repatriates all its income in country Y back to country X
- Tax rates:
 - Host country Y reduces profit tax rate from 30% to 5%
 - Home (Source) country X's tax rate = 50%



Example (2)

<ul style="list-style-type: none"> Initial situation 	<ul style="list-style-type: none"> Tax reduction no tax sparing 	<ul style="list-style-type: none"> Tax reduction with tax sparing
<p><u>Tax revenue</u> Tax paid to Y = £30,000 Tax credit in X= £30,000 Tax paid to X: = £50,000 – 30,000 = £20,000</p> <p><u>Firm</u> Global profit after tax = £50,000</p>	<p><u>Tax revenue</u> Tax paid to Y = £5,000 Tax credit in X= £5,000 Tax paid to X: = £50,000 – 5,000 = £45,000</p> <p><u>Firm</u> Global profit after tax = £50,000</p>	<p><u>Tax revenue</u> Tax paid to Y = £5,000 Tax credit in X= £30,000 Tax paid to X: = £50,000 – 30,000 = £20,000</p> <p><u>Firm</u> Global profit after tax = £75,000</p>

Empirical Evidence

- Among the nations that have negotiated tax sparing agreements in their tax treaties are Australia, Canada, France, Germany, Japan, the Netherlands, New Zealand, and the United Kingdom.
- The USA has stood by its anti-tax sparing position since 1957 when tax sparing was first proposed in the tax treaty between the US and Pakistan.

Treaties with tax sparing provision	Date of signature
Albania-Malta	02/May/2000
Armenia-Qatar	22/Apr/2002
Australia-Malaysia	28/July/2002
Austria- Nepal	15/Dec/2000
Bahrain-Thailand	03/Nov/2001
Barbados-Malta	05/Dec/2001
Brazil-Paraguay	20/Sept/2000
Bulgaria-Mongolia	28/Feb/2000
Bulgaria-Thailand	16/June/2000
Canada-Mongolia	27/May/2002
China-Nepal	14/Mar/2001
Cuba-Russia	14/Dec/2000
Cyprus-Mauritius	21/Jan/2000
Denmark-Pakistan	02/May/2002
Estonia-Malta	03/May/2001
Germany-Malta	08/Mar/2001
Greece-Slovenia	05/June/2001
Greece-Ukraine	06/Nov/2000
Iceland-Vietnam	03/Apr/2002
Ireland-India	06/Nov/2000
Korea-Algeria	24/Nov/2001
Korea-Nepal	05/Oct/2001
Korea-Slovak Republic	27/Aug/2001
Latvia-Malta	22/May/2000
Lithuania-Malta	17/May/2001
Malta-Russia	15/Dec/2000
Malta-Tunisia	31/May/2000
Netherlands-Mongolia	08/Mar/2002
Nepal-Pakistan	25/Jan/2001
Portugal-Cuba	30/Oct/2000
Portugal-Malta	26/Jan/2001
Spain-Turkey	05/July/2002
Thailand-United Arab Emirates	01/Mar/2000
Source: Thuronyi (2003, p. 302)	

Debates on tax sparing

- **Pro tax sparing**

- Inducing more investment.
- As an economic aid.
- Increasing competitiveness of resident companies.

- **Against tax sparing**

- Unnecessarily loss of tax revenue.
- accelerating tax avoidance/ tax evasion.
- OECD recommends restricted use and time limitations.

Literature

- Mainly focuses on the effect of tax sparing on foreign direct investment.
- Empirical findings widely diverge:
 - Single & Kramer (1996), Single (1999): minimal or no effect.
 - Hines (1998), Azémar et al. (2007): positive effect.
 - Blonigen & Davies (2002), Egger et al. (2006): negative effect.

Motivation

Question: Why countries enter tax sparing agreement?

- If tax sparing is agreed,
 - host countries lose tax revenues.
 - source countries also lose tax revenue by allowing more than a full foreign tax credit.
 - it can be abused to facilitate tax evasion/avoidance.
- Effects of tax sparing on investment is unclear.

This paper

- presents two alternative approaches to model tax sparing agreements, *cooperative* and *competitive*.
- **Objective**: we aim to explain why countries agree on tax sparing.

Cooperative Approach: The Model

- Two countries, X (source country) and Y (host country).
- A firm from the source country locates production in the source and in the host countries.
- The gross profit is concave in output,

$$\pi(q) = q^\gamma, 0 < \gamma < 1$$

- The total output is fixed at Q
- The proportions of output produced in Y and in X are λ and $1-\lambda$, respectively.

Cooperative Approach (2)

- Base tax rates:
 - t_x in the source country;
 - t_Y^* in the host country.
- If the countries enter a tax sparing agreement
 - the host country applies a reduced tax rate,
 $t_Y < t_Y^*$
 - the source country applies foreign tax credit,

$$(a t_Y^* + (1-a) t_Y) \pi_Y$$

where $\pi_Y = (\lambda Q)^\gamma$

Cooperative Approach (3)

- The game:
 - In Stage 1, the source country and the host country bargain over $\{a \in [0, 1], t_Y \in (0, t_Y^*]\}$ to maximize the value of Nash product;

$$N = (W_X)^\mu (t_Y \pi_Y)^{(1-\mu)}$$

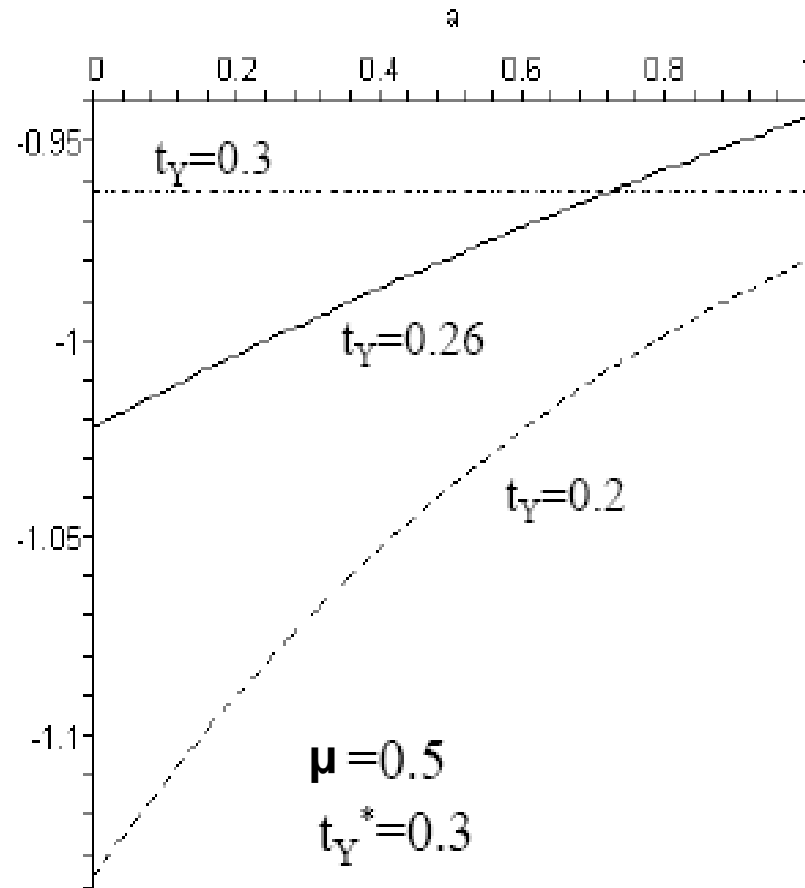
where $W_X = TR_X + \pi$.

- In Stage 2, the firm chooses λ to maximize after-tax profit (π).

The game is solved by backward induction.

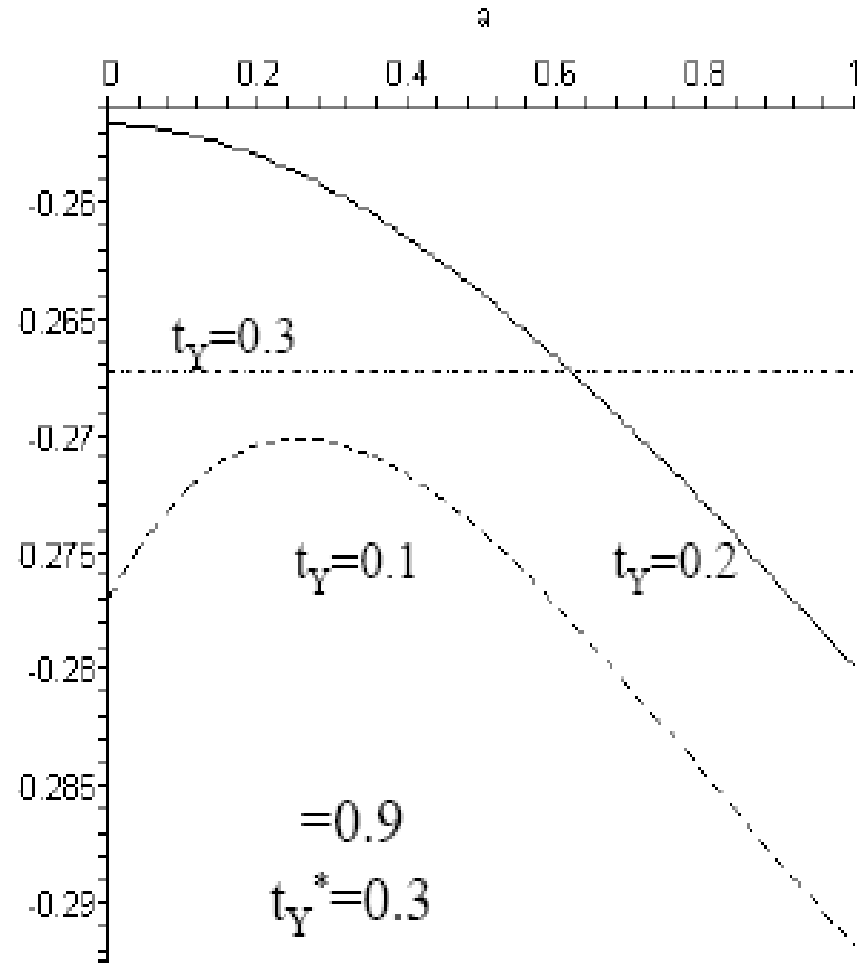
Cooperative Approach: Results (1)

- **When μ is relatively low,**
in equilibrium $a=1$
and $t_Y < t_Y^*$ if t_Y^* is sufficiently large;
otherwise $t_Y = t_Y^*$
and a is irrelevant.



Cooperative Approach: Results (2)

- **When μ is relatively high,**
in equilibrium $a=0$
and $t_Y=2(1-\mu)$
provided
 $t_Y^* > 2(1-\mu)$;
otherwise $t_Y = t_Y^*$
and a is irrelevant.



Cooperative Approach: Results (3)

- A tax sparing agreement that involves reduced tax rate in the host country is more likely to happen when the source country has **lower** bargaining power than the host country.
- This may not seem a convincing explanation for the case where the host country is a less developed country and the source country is a developed country.

Competitive Approach: The Model

- Three countries, X (source country), Y and Z (host countries);
- A firm from the source country X locates production in country Y and Z;
- The gross profit is concave in output,

$$\pi(q) = q^\gamma, 0 < \gamma < 1$$

- The total output is fixed at Q
- The proportions of output produced in Y and in Z are λ and $1-\lambda$, respectively.

Competitive Approach (2)

- Base tax rate
 - t_x in the source country;
 - t_y^* and t_z^* in the host country.
- The host countries Y and Z' reduced tax rates are t_y and t_z
- Tax rebate by the home country on the tax paid abroad:

$$(a t_y^* + (1-a) t_y) \pi_Y + (a t_z^* + (1-a) t_z) \pi_Z$$

Competitive Approach (3)

- The game:
 - In Stage 1 the source country chooses $a \in [0, 1]$ to maximize $W = TR_x + \pi$
 - In Stage 2 the host countries simultaneously set reduced tax rates to maximize tax revenues;
 - In Stage 3 the firm chooses λ to maximize after-tax profit.

The game is solved by backward induction.

Competitive Approach: Results (4)

- In stage 3: Given tax rates, the firm's optimal choice is

$$\lambda = \frac{\theta}{1 + \theta},$$

$$\theta = \left(\frac{1 - t_X + a(t_Y^* - t_Y)}{1 - t_X + a(t_Z^* - t_Z)} \right)^{1/(1-\gamma)} .$$

Competitive Approach: Results (5)

- In stage 2: The best response of country Y is

$$t_Y = \min \{ \bar{t}_Y, t_Y^* \}$$

where \bar{t}_Y solves

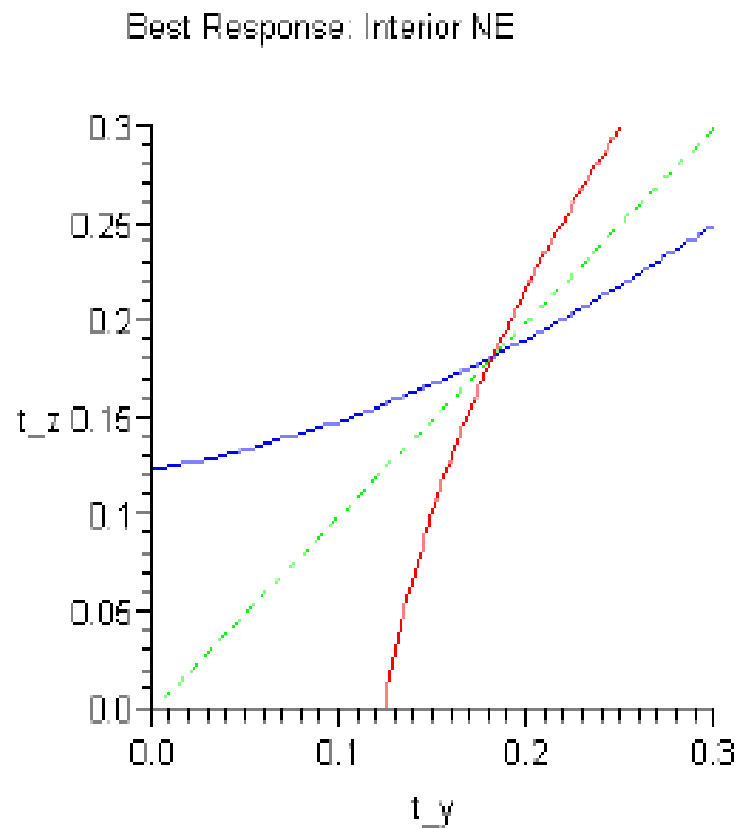
$$\bar{t}_Y = \frac{1}{1 + \frac{\gamma}{1 - \gamma} \frac{\bar{\theta}}{1 + \bar{\theta}}} \left(t_Y^* + \frac{1 - t_X}{a} \right)$$
$$\bar{\theta} = \left(\frac{1 - t_X + a (t_Y^* - \bar{t}_Y)}{1 - t_X + a (t_Z^* - t_Z)} \right)^{1/(1-\gamma)} .$$

Competitive Approach: Results (6)

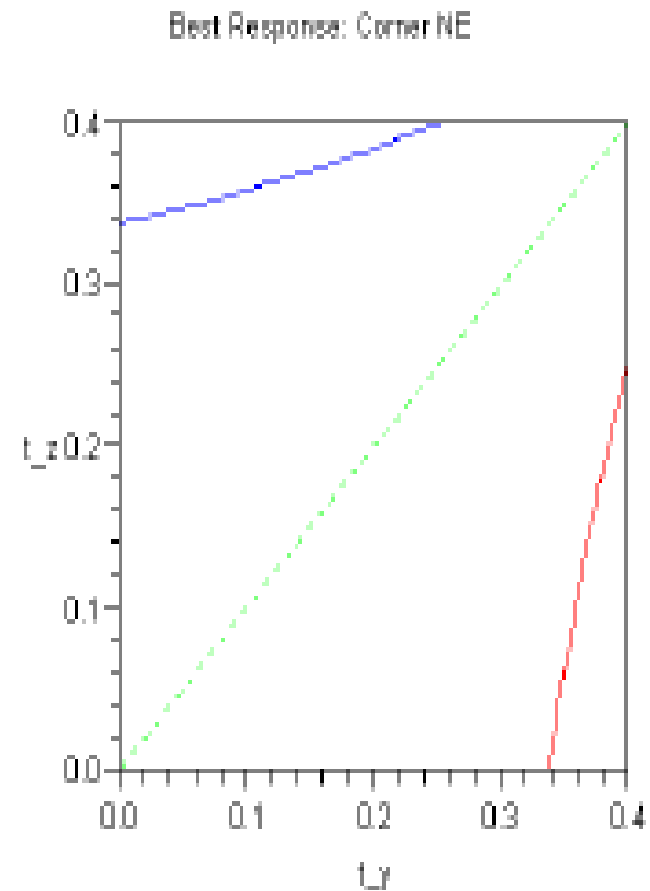
- The best response of country Z is similar.
- The best response functions of country Y and Z are upward-sloping and strictly convex in the interior.
 - The Symmetric Nash equilibrium tax rates occur when Y and Z are symmetric ($t^*_Y = t^*_Z$)
- The Symmetric equilibrium tax rates can either be at an interior or a corner.

Competitive Approach: Results (7)

Interior solution



Corner solution



Competitive Approach: Results (8)

- In stage 3: The source country solves

$$\max_{\{0 \leq a \leq 1\}} W = TR + \bar{\pi}$$

- Upon cancellation we obtain

$$W = (1 - t_Y)\lambda Q^\gamma + (1 - t_Z)((1 - \lambda)Q)^\gamma$$

Competitive Approach: Results (9)

- In the symmetric interior equilibrium,

$$\frac{dW}{da} = C_0 \frac{1 - t_X}{\left(1 + \frac{\gamma}{2(1 - \gamma)}\right) a^2} > 0,$$

hence, $a = 1$

- In the symmetric corner equilibrium, W does not depend on a .

Summary (1)

- This paper provides two alternative explanations for the existence of tax sparing agreements.
- In the cooperative approach, the source country and the host country bargain over tax rate and foreign tax credit.
 - tax sparing is more likely when the source country has a **lower** bargaining power.
 - Not a satisfactory explanation when the host country is a less developed country.

Summary (2)

- In the competitive approach, two host countries compete for investment.
 - The reduced tax rate is an outcome of the host countries' tax competition.
 - It is optimal for the source country to agree on tax sparing with both host countries.

Thank you