

Tax Competition and FDI: The Special Case of Developing Countries

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Introduction

- All countries compete against each other, over corporate tax rates, to attract FDI.
- Corporate tax rates have fallen considerably over the last decade, leading to lower tax rates in developing than in developed countries.
- Nevertheless, the impact of taxes on FDI in developing countries has been neglected by the tax literature.
- **Research question:** Do corporate tax rates influence foreign investors in developing countries?

Motivations

1. Elasticity

- The impact of taxes on FDI in developing countries remains empirically unclear.
- Is low taxation seen as a second rank determinant for FDI, with a marginal effect?
- Or as an important determinant that can compensate for weak economic and political fundamentals?

2. Asymmetry between developed and developing countries

- Imperfect competition → small countries choose lower tax rates relatively to large countries (Haufler and Wooton, 1998).

- Consequently: the effect of taxes on FDI should be higher in small countries than in large ones (Bucovetsky, 1991; Wilson, 1991).

- Following the same reasoning, the effect of taxes *should be* higher in determining FDI activity in developing countries which have a weaker business environment .

- ❖ Comparison of investors' sensitivity to corporate tax rates in developing and developed countries.

3. Tax competition and race to the bottom

- Growing influence of corporate tax rates on the location of foreign capital → race to the bottom?
- Is tax competition amplified for countries suffering from a lack of attractiveness?
- However, in parallel increasing importance of other determinants such as: the quality of infrastructure, the ease of doing business, the availability of skills.
- ❖ Measuring the influence of public goods and public governance (partly financed by corporate taxes) can provide an idea of the tax competition situation in developing countries.

4. Tax Sparing and the elasticity between taxes and FDI

- *Tax sparing (TS)*: provision included in a number of bilateral tax treaties (between a developed and a developing country).
- *Aim of TS*: to promote economic development by ensuring that fiscal grants to foreign investors in the host country are not nullified by the taxation of income in the home country.
- *In practice*: Under TS, the STR becomes a fixed foreign tax credit that firms can subtract from the taxes owed to the home country, even if the foreign effective taxes paid are lower due to tax incentives.

❖ Under TS this is the difference between the STR and the effective tax rate that matters → the impact of STR should be lower.

South Africa: TS provisions appear in only two South Africa's bilateral tax treaties (Romania and Mauritius).

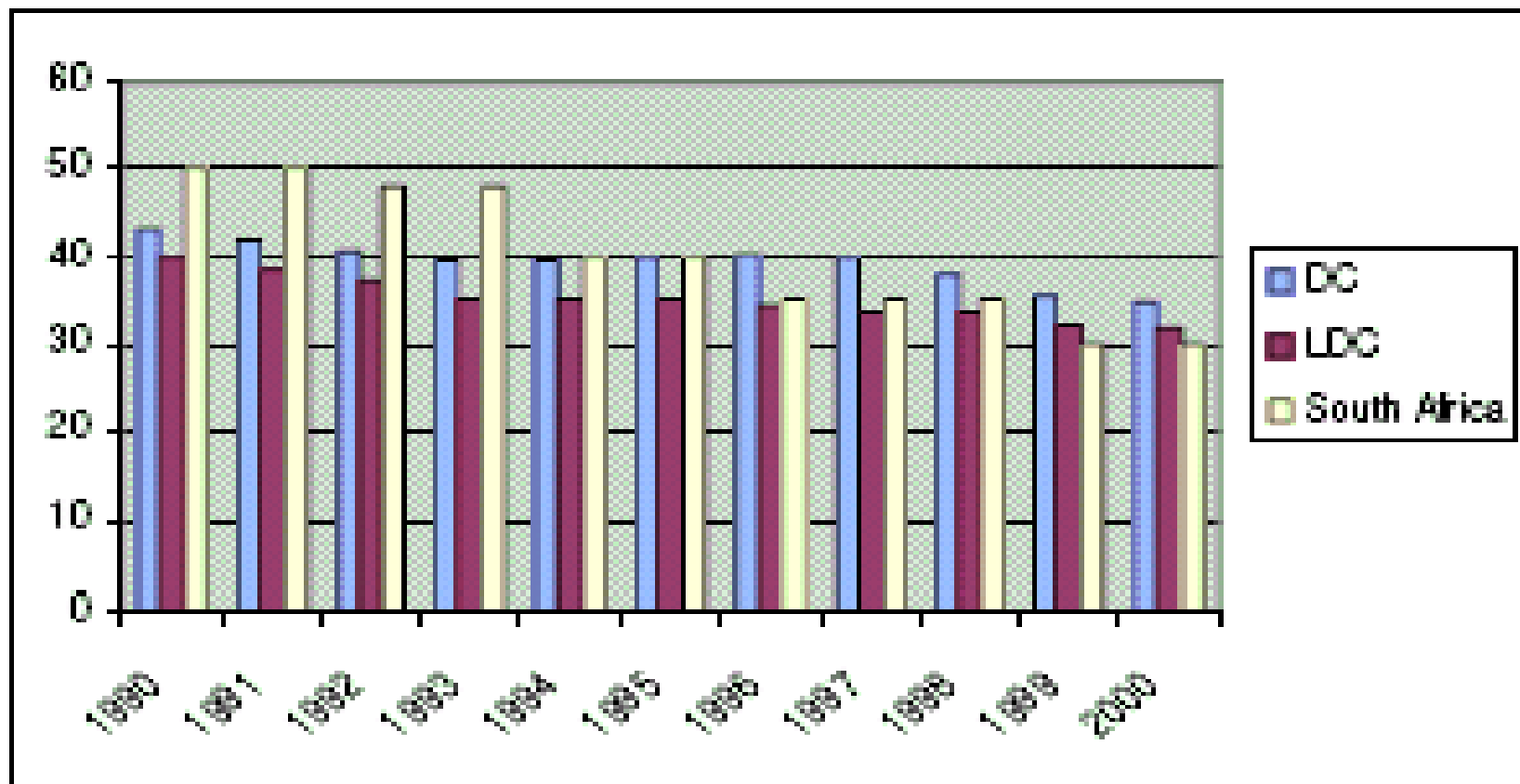
Data

- Location choices of Japanese affiliates between 1990 and 2000 (annual surveys published by Toyo Keizai).
- 12439 affiliates in 62 developed and developing countries.
- Data on statutory tax rates (STR) which correspond to the *maximum marginal tax rates faced by businesses* (University of Michigan World Tax Database).

Table 1. Number of Japanese affiliates 1990-2000

Countries	Nb of Investments	Countries	Nb of Investments	Countries	Nb of Investments
Angola	1	Fiji	2	Oman	2
Argentina	26	Finland	17	Pakistan	17
Australia	309	France	297	Panama	119
Austria	39	Germany	443	Paraguay	1
Bahamas	7	Guatemala	1	Peru	12
Bahrain	4	Honduras	2	Philippines	387
Bangladesh	7	India	148	Portugal	27
Barbados	2	Indonesia	612	Saudi Arabia	3
Belgium	99	Iran	4	South Africa	36
Bolivia	2	Ireland	44	Spain	122
Brazil	124	Israel	11	Sri Lanka	20
Cambodia	3	Italy	157	Sweden	45
Canada	171	Korea	334	Switzerl	37
Chile	40	Luxembou	15	Tanzania	2
China	2941	Malaysia	657	Thailand	948
Colombia	14	Malta	1	Tunisia	3
Costa Rica	3	Mauritius	3	United K	727
Denmark	16	Mexico	164	Uruguay	1
Dominica	1	Morocco	1	USA	2620
Ecuador	4	Netherla	319	Venezuela	10
Egypt	7	Nigeria	3	Vietnam	228
El Salvador	1	Norway	15	Zimbabwe	1

Figure 1. Statutory Tax Rates Evolution Between 1990 and 2000



- Baseline specification:

$$\text{FDI}_{ij} = \beta_0 + \beta_1 \text{STR}_{ij} + \beta_2 \text{Ln}(\text{GDP})_{ij} + \beta_3 \text{Ln}(\text{GDP per capita})_{ij} + \beta_4 \text{Ln}(\text{Trade openness})_{ij} + \beta_5 \text{Ln}(\text{RER})_{ij} + \beta_6 \text{Ln}(\text{Distance})_{ij} + \beta_7 \text{Asia dummy} + \varepsilon_{ij}$$

- Interaction terms are added to distinguish developing from developed countries:

- $DC=1$ if developed country, $DC=0$ otherwise.
- $LDC=1$ if developing country, $LDC=0$ otherwise.

- GTL: Public goods; GOV: Public Governance

- GTL = Principal component analysis of (i) G: Education (gross secondary enrolment ratio), (ii) T: Infrastructure (telephone lines), (iii) L: Health (life expectancy at birth).
- GOV = Principal component analysis of 6 aggregate governance indices estimated by Kaufmann et al. (1999).

Results 1: Taxes and FDI

- For a 1% point \uparrow in the STR, the annual number of Japanese firms \downarrow by 3.5% in developing countries.
- Elasticity 2.4 larger in developing countries as compared to developed countries.
- An interaction term between GDP per capita and taxes also suggests that the effect of taxes diminish for countries with higher levels of GDP per capita.
- South Africa: With a GDP per capita of \$9486 in 2000, a 1% point increase in the South African STR, decreases the annual number of Jap. Firms by 2.06%.

Results 1. Number of Japanese firm locations and foreign taxes

	Random NBM		
	(1)	(2)	(3)
ln GDP	0.917*** (0.087)	0.901*** (0.089)	0.949*** (0.085)
ln GDP per capita	-0.058 (0.159)	-0.269 (0.182)	-1.136*** (0.309)
ln Trade	0.684*** (0.176)	0.639*** (0.179)	0.637*** (0.172)
ln Real exchange rate	-0.022 (0.045)	-0.006 (0.045)	-0.050 (0.046)
ln Distance	0.239 (0.287)	0.251 (0.289)	-0.067 (0.289)
East Asia and Pacific dummy	1.400*** (0.419)	1.121*** (0.421)	1.121*** (0.421)
STR	-2.542*** (0.774)		-26.139*** (6.031)
Dummy LDC*STR		-3.571*** (0.892)	
Dummy DC*STR		-1.465* (0.880)	
ln GDP per capita * STR			2.627*** (0.668)
Constant	-24.241*** (3.577)	-21.805*** (3.768)	-12.391*** (4.578)
Observations	541	541	541
Number of countries	62	62	62
Log likelihood	-1162.331	-1159.5759	-1155.3164
likelihood-ratio test vs. pooled	256.81	262.24	257.98
Likelihood-ratio test of alpha=0	1462.42	1464.28	1373.41
Hausman test	1.36	4.68	1.90
Prob>chi2	1.0000	0.9985	1.0000

Results 2: Tax Sparing and the elasticity between taxes and FDI

- Interaction terms are added to distinguish TS countries (13 countries of the sample) from no TS countries.
- Under TS, the impact of STR is lower.
- The STR remains statistically significant for no TS countries such as South Africa.

Results 2. Role of tax sparing in the elasticity between FDI and STR

	Random NBM		
	(1)	(2)	(3)
ln GDP	0.894*** (0.091)	0.842*** (0.098)	0.858*** (0.092)
ln GDP per capita	-0.241 (0.197)	-0.074 (0.217)	-0.219 (0.185)
ln Trade	0.638*** (0.179)	0.707*** (0.191)	0.588*** (0.178)
ln Real exchange rate	-0.005 (0.045)	-0.011 (0.047)	-0.003 (0.045)
ln Distance	0.288 (0.305)	0.540 (0.351)	0.361 (0.291)
East Asia and Pacific dummy	1.436*** (0.427)	1.658*** (0.448)	1.550*** (0.431)
Dummy DC*STR	-1.478* (0.882)	0.458 (0.775)	-1.194 (0.886)
Dummy LDC* STR* noTS	-3.607*** (0.898)	-2.057*** (0.899)	
Dummy LDC*STR* TS	-3.366*** (1.047)	-1.518 (1.362)	
Dummy LDC*STR			-3.661*** (0.891)
Numer of year TS* STR			0.048* (0.027)
Constant	22.220*** (3.911)	-25.577*** (4.592)	-22.130*** (3.724)
Observations	541	518	541
Number of countries	62	59	62
Log likelihood	1159.506	1099.6835	1158.0379
likelihood-ratio test vs. pooled	245.55	225.17	245.38
Likelihood-ratio test of alpha=0	1454.42	1328.43	1391.82
Hausman test	11.61	12.35	14.59
Prob>chi2	0.8667	0.8284	0.6898

Results 3: Taxes, Public goods, Public governance and FDI

- Public goods, the quality of institutions and corporate tax rates have a statistically significant impact on FDI location choices.
- Provision of public goods has a stronger influence on FDI compared to the quality of institutions.
- South Africa: To ↑ the annual number of Jap. firms by 10% (in 2000):
 - Decrease STR by 2.75 point % (27.25% instead of 30% in 2000).
 - Improve the provision of public goods by 17%.
 - Improve the quality of public governance to correspond to the level of Korea.

Results 3. Number of Japanese firm locations, foreign taxes, public goods and public

	Random NBM				
	(1)	(2)	(3)	(4)	(5)
Dummy LDC * STR	-3.720*** (0.866)	-3.504*** (0.864)	-3.567*** (0.833)		
Dummy DC * STR	0.077 (0.925)	-0.915 (0.954)	-0.432 (0.992)		
Dummy LDC * GTL	0.386*** (0.114)		0.460*** (0.122)		
Dummy DC * GTL	-0.327 (0.214)		-0.447*** (0.217)		
Dummy LDC * Gov		0.203** (0.096)	0.179* (0.093)		
Dummy DC * Gov		-0.088 (0.099)	0.226* (0.128)		
STR				-3.268*** (0.784)	-3.583*** (0.778)
STR * GTL				3.524*** (0.904)	
GTL				-1.004*** (0.324)	
STR * Gov					1.303*** (0.328)
Gov					-0.293** (0.121)
Constant	-14.194*** (4.203)	-20.832*** (3.749)	-13.443*** (4.205)	-19.200*** (3.855)	-21.037*** (3.622)
Observations	541	541	541	541	541
Number of countries	62	62	62	62	62
Log likelihood	1148.4635	1156.8664	1144.8036	1154.7101	1153.4062
likelihood-ratio test vs. pooled	268.13	262.96	272.17	257.18	248.84
Likelihood-ratio test of alpha=0	1472.43	1482.86	1467.34	1398.33	1346.93
Hausman test	10.99	20.32	35.55	4.88	21.31
Prob > chi2	0.9242	0.3754	0.6878	0.9990	0.2643

Conclusion

- The level of corporate tax rates is a strong determinant of FDI in developing/emerging countries.
- Investors are more sensitive to the level of taxes in countries relatively less endowed with economic and political fundamentals.
 - Low corporate tax rates allow a country to compensate for disadvantages in terms of market size, public goods and public governance.
- Race to the bottom?
 - Downward pressures on the taxation of capital are limited by the importance of public goods and public governance which ↑ the attractiveness of a country and which are partly financed by corporate taxes.