

Are tax rates still decisive in FDI investment choice or what drives sectoral FDI nowadays?

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April 11, 2023

Workshop Inovarea și șocurile în economia globală

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Introduction I

- A variety of determinants are evaluated by companies before deciding to invest abroad while FDI still increases constantly in developed countries since the 2000s.
- Affected by the financial crisis of 2007 and the pandemic crisis of 2020, government deficits are soaring due to increased public spending.
- Investment is seriously affected and governments are looking for a way to increase it.
- FDI is a valid and credible solution, so governments are in strong competition with each other.

Introduction II

- Taxation is a traditional determinant for FDI, but the institutional quality represents a new aspect of private decision-making.
- Companies benefit from tax avoidance in many developed countries, as there is a huge difference between pre-tax income and what they actually owe.
- Our contribution is threefold:
 - we introduce the apparent effective tax rate à la Mendoza et al. (1994).
 - our study concerns the FDI sectors namely exploiting natural resources, manufacturing and services industries.
 - we add institutional quality, claiming that performing domestic institutions attract FDI.
- Our findings indicate that government should lower taxation for more FDI flows and strengthen tertiary and secondary enrollment.

- In general, papers which analyze the determinants of FDI are generous:
 - Trade openness attracts Japanese FDI in specific locations, as Azémar and Delios (2008) claim.
 - Higher FDI flows mean unsustainable current account deficits, as Nier et al. (2014) display.
 - The amount of GDP is positively correlated with the FDI, as expected Bénassy-Quéré et al. (2005).
 - Population matters when FDI is reached as Eaton and Tamura (1994) show.
 - Alsan et al. (2006) prove that FDI inflows are strongly and positively influenced by population health.
 - Blomström (2002) mentions that education and R&D spending attract FDI inwards.
 - Egger et al. (2014) exhibit that education has a significant positive result on investment.

Literature review II

- King and Fullerton (1984) introduce the effective marginal tax rates (EMTR) in a comparative analysis, and then Mendoza et al. (1994) compute a newborn method.
- Devereux and Griffith (1998a) compute the effective average tax rates (EATR) in a neoclassical approach and Devereux and Griffith (1998b) affirm that the effective average tax rate plays a role in the choice between FDI locations.
- Bénassy-Quéré et al. (2007) point out that public efficiencies, like tax systems, contract law or lack of corruption, are a major determinant of inward FDI.
- Stöwhase (2005) accrues that high taxes deter the bilateral sectoral FDI in the EU. Walsh and Yu (2010) highlight that the secondary FDI sector is positively affected by both labour market and financial depth.

- We employ the Generalized Method of Moments (GMM) dynamic estimator following the Arellano-Bond methodology:

$$FDI_{i,t} = \alpha + \lambda FDI_{i,t-1} + \beta X_{i,t} + \mu_i + v_{i,t} \quad (1)$$

- We use lagged values in levels as instruments on the left- and right side and we obtain:

$$FDI_{i,t} - FDI_{i,t-1} = \alpha + \lambda(FDI_{i,t-1} - FDI_{i,t-2}) + \beta(X_{i,t} - X_{i,t-1}) + (v_{i,t} - v_{i,t-1}) \quad (2)$$

$FDI_{i,t}$ represents the FDI flow, as a percentage of GDP

$X_{i,t}$ represents the macroeconomic and development or institutional variables

μ_i is the time-invariant country-specific effects

$v_{i,t}$ is the error term

- **Dependent variable:** the FDI flow per country and sector. We add FDI position (stock) for robustness.
- **Independent variable:** the apparent taxation, calculated as the ratio of observed receipts to observed taxable income (i.e., the ratio of Corporate tax revenues and Operating Surplus).
- We use development indicators such as R&D, the domestic credit provided by the financial sector, the school enrollment (i.e., secondary and tertiary), and institutional quality variables, such as rule of law and corruption control.
- The data sources are the OECD databases Statistics and World Bank for 23 European countries that are also OECD members and the length of the period studied lasts from 2000 to 2020.

Results 1

Table: The effects of apparent taxation on Total FDI flows

Explanatory var.	R&D	Credit	Secondary	Tertiary	Rule of law	Corruption control
Apparent effective tax	-3.96 (4.14)	-4.74 (6.10)	-5.88 (6.61)	-3.10 (2.78)	-7.6 (9.50)	-6.91* (4.46)
Current account	-2.45*** (0.82)	-3.00** (1.50)	-2.43** (1.19)	-3.71* (2.15)	-3.00* (1.64)	-2.45*** (0.75)
Trade	-0.50 (0.64)	-0.63 (1.31)	0.12 (0.44)	-0.74 (1.13)	0.98 (-0.21)	-0.22 (0.43)
GDP growth	1.97** (0.94)	2.78* (1.57)	2.87** (1.37)	3.89* (2.64)	2.95** (1.49)	2.25*** (0.78)
Urban population	-3.04 (12.71)	-11.96 (19.00)	-13.00 (17.52)	-24.43 (26.91)	-9.71 (21.59)	-0.04 (13.52)
Health expenditure	-0.84 (14.59)	31.96 (36.34)	28.76 (33.68)	23.88 (37.8)	34.87*** (40.48)	7.36*** (22.97)
Expenditure on edu.	-0.11 (14.60)	-6.25 (31.74)	-2.82 (28.19)	14.05 (7.68)	-11.79 (54.76)	7.44*** (23.99)
Quality of Institutions	7.16 (14.95)	0.53 (-0.23)	-0.13 (0.40)	1.67* (1.24)	-15.75 (45.21)	-8.86** (43.45)
No. Obs.	313	328	326	318	335	335
Sargan p-value	0.86	0.99	0.90	0.90	0.80	0.86

Standard errors in parentheses. Significance Codes: *** : 0.01; ** : 0.05; * : 0.1.

Table: The effects of apparent taxation on Services FDI flows

Explanatory var.	R&D	Credit	Secondary	Tertiary	Rule of law	Corr ctr	Total stock
Apparent effective tax	-8.90*** (2.97)	-7.34** (3.60)	-0.38 (4.24)	-1.77 (3.53)	-8.60* (6.48)	-7.93* (5.85)	-7.27** (3.48)
Current account	-2.77*** (0.75)	-3.27*** (1.34)	-1.02* (0.93)	-3.84** (1.74)	-2.71*** (0.88)	-2.56*** (0.78)	-2.51*** (0.67)
Trade	-0.58 (0.52)	0.26 (1.35)	0.65 (0.28)	-0.64 (0.76)	0.20 (0.35)	0.20 (0.50)	0.26 (0.32)
GDP growth	2.00*** (0.55)	1.79** (0.89)	2.30*** (0.34)	4.41*** (1.50)	2.55*** (0.75)	2.39*** (0.88)	2.14*** (0.51)
Urban population	-2.32 (10.14)	2.31 (9.28)	-5.12 (12.14)	-27.13* (24.38)	-1.64 (11.22)	-1.35 (9.57)	-1.96 (10.73)
Health expenditure	0.08 (17.39)	-3.20 (25.31)	9.65 (15.10)	-6.89 (22.88)	11.52 (14.02)	4.99 (13.30)	8.23 (10.92)
Expenditure on edu.	2.39 (27.53)	11.03 (18.64)	2.69 (12.59)	48.10 (33.29)	-2.18 (18.48)	2.18* (18.85)	-2.36* (14.60)
Quality of Institutions	21.05* (15.29)	-0.83 (0.93)	-1.17*** (0.22)	3.04* (2.19)	-23.04 (41.07)	-17.43 (57.12)	0.01 (0.13)
No. Obs.	313	328	326	318	335	335	335
Sargan p-value	0.51	0.35	0.45	0.74	0.40	0.31	0.28

Standard errors in parentheses. Significance Codes: *** : 0.01; ** : 0.05; * : 0.1.

Table: The effects of tax rate differential on Services FDI flows

Explanatory	R&D	Credit	Secondary	Tertiary	Rule of law	Corruption control	Total stock
Tax differential	-9.85 (10.65)	-6.43* (4.08)	-4.15* (3.49)	-2.06 (5.21)	-5.33 (3.97)	-1.64 (3.79)	-8.06* (5.29)
Current account	-2.89* (1.55)	-2.25 (1.95)	-1.21* (1.07)	-4.29* (2.30)	-2.23*** (0.73)	-2.35*** (0.73)	-3.30** (1.64)
Trade	-0.27 (0.73)	0.20 (1.23)	0.59** (0.25)	-0.83 (0.96)	0.21 (0.36)	0.14 (0.32)	0.51 (0.50)
GDP growth	2.73 (2.12)	2.99*** (1.12)	3.05*** (1.19)	4.93** (2.21)	2.10 (1.04)	2.57*** (0.87)	3.65** (1.94)
Urban pop.	-36.17 (29.54)	-11.271** (11.92)	-18.27 (15.14)	-39.48* (33.19)	-24.34 (19.37)	-21.89 (13.77)	-36.20 (33.15)
Health exp.	0.77 (14.85)	-11.11 (19.46)	-2.23* (29.50)	-14.40 (24.92)	-17.07 (22.32)	-5.27 (16.69)	-19.81 (23.89)
Expen. on edu.	2.19 (12.83)	22.27 (28.22)	27.57 (38.47)	63.13 (50.29)	18.77 (32.62)	14.52* (22.58)	19.10 (23.48)
Quality of Inst.	-41.63 (59.45)	0.04 (1.07)	-1.29*** (0.42)	3.56* (2.37)	44.44 (49.48)	-9.90 (56.06)	-0.41 (0.37)
No. Obs.	313	328	326	318	335	335	335
Sargan p-value	0.69	0.48	0.92	0.85	0.50	0.26	0.76

Standard errors in parentheses. Significance Codes: *** : 0.01; ** : 0.05; * : 0.1.

Conclusion and interpretation

- Multinational companies are looking for durable competitive advantages when they decide to invest outside their domestic countries which could be good infrastructure, lower taxation, or better institutions.
- There are a lot of determinants which affect FDI and we focus on effective taxation and the quality of institutions.
- Besides, the effects of taxation differ regarding the industry in which a company wants to invest.
- A rise in both apparent taxation and tax differential reduces sectoral FDI flow while soaring tax differential increase FDI stock.

Conclusion and interpretation

- Among the institutional quality variables, the control of corruption yields negative effects on FDI which is unlikely, but tertiary enrollment plays a role in attracting FDI.
- Secondary attainment has positive effects on sectoral FDI with the exception of Services FDI, and negative effects on Services FDI.
- Our findings indicate that government should lower taxation if it wants more FDI flows. In plus, it is indicated to strengthen development/institutional indicators namely tertiary and secondary enrollment.

Thank you for your attention!