ISSN 2364-0790
Proceedings of the Symposium on Business and Economics in Times of Crisis Vol. 3 (2015)
Lupcon Center for Business Research

Examining the nature of Foreign Direct Investments' responses to adjusting Corporate Income Tax Rates in OECD countries

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Abstract

The study investigates the nature of the FDI inflow responses to Corporate Income Tax Rate changes in a group of 12 OECD countries during the period 1982-2005. The corporate income tax rates employed in this panel study are; the effective average tax rates, the statutory tax rates and the effective marginal tax rates. The investigation is carried out in a static, both linear and nonlinear panel framework where FDI flows and corporate income tax rates are employed in differentials. The research framework lies beyond the concept of the bilateral FDI flows in pairs of competing countries, and explores the FDI differential inflows responsiveness to changes in countries' tax differentials, economic, infrastructure and institutional agents. The findings reveal a sound negative, nonlinear relationship, between FDI inflows, statutory tax rates and effective average tax rates. Evidences in support of a '*yardstick effect'* can be also drawn, given the revealed superiority of the STR as a policy instrument to attract FDI inflows, over the EMTR. Apparently, countries competing for FDI inflows, could consider adjusting their corporate tax rates as an instrument to attract investments. However, its diminishing efficiency should be flagged along with the vital role that economic growth, infrastructure, technology and institutional agents, play in the attractiveness of a country as a potential FDI destination. Finally, the study offers evidences in favour of the '*no race to bottom scenario*' in the tax competition literature.

JEL: F21, F23, H25
Keywords: Foreign Direct Investment flows, Tax competition, Corporate Income Tax Rates, Effective Average Tax Rates, Statutory Tax Rates, Effective Marginal Tax Rates.

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The views expressed in this paper are those of the author and do not necessarily represent the views or position of either the European Commission or the Ministry of Finance of the Hellenic Republic.

Over the last decades the considerable decrease of pre-existing physical and institutional barriers in the world trade, intensified drastically the competition for FDI inflows, among countries competing at a global scale. In this context, the intensification of FDI-related aggressive practises (i.e. transfer pricing, intra group financing, etc.), not only highlighted the vital role of corporate taxation but also, questioned its power when tax rates are used by countries as the single policy instrument in the strive to attract global FDI flows.

In the field literature, studies approached the relationship between FDI and corporate tax rates in a variety of ways. Studies such as Hartman (1984), Boskin and Gale (1987), Young (1988), and Swenson (1994), concerned with time-series estimation of the correlation between the level of FDI and the annual variation of the after-tax rate of return, focusing mainly on the US. An alternate approach has been to explore the location of FDI based on cross-sectional estimations, as in Grubert and Mutti (1991), Hines and Rice (1994), Desai, Foley and Hines (2004a), and Altshuler and Grubert (2004), among other studies.

The relationship between corporate taxation and FDI has also been studied by Slemrod (1990), who is critical of previous works (e.g. Hartman, 1984) and marks a point of departure for subsequent studies by considering pooled bilateral FDI flows in aggregate time-series data and quantifying tax rates by means of the Effective Marginal Tax Rate (EMTR), proposed by Auerbach and Hines in 1988.

A first meta-analysis of the empirical literature on the impact of corporate taxes on the allocation of FDI, was performed by De Mooij and Ederveen (2003), who estimated that the median tax-rate elasticity of foreign capital was negative (-3.3) and found FDI to be more responsive to EATR than to statutory tax rates. The same study found no support for the importance of tax credits or tax-exemption treaties for the FDI allocation of the home country. De Mooij and Ederveen (2005), analysed further surveys such as these of Hines (1999), Devereux and Griffith (2002) and De Mooij and Ederveen (2003), that conclude on company taxes having a significant negative impact on the location of investment and, found the following: '*…this literature, however, suffers from important problems regarding data and identification. In particular, one would ideally use information about real investment decisions by*

multinational companies and the true tax rates that these companies would pay at different locations. Yet, both capital data and tax data are usually imperfect. Studies therefore rely on imperfect measures for capital allocation and tax rates. With respect to capital, most studies use aggregate data on foreign direct investment (FDI).' De Mooij and Ederveen (2005) revise slightly the findings of their own previous study (De Mooij and Ederveen, 2003) and conclude that: '*..the type of capital data and tax data exert a systematic impact on reported elasticities. Also, controlling for openness and agglomeration tendencies appears to significantly affect the elasticity values'.*

Regarding the issue of double-taxation circumvention in international practises, most countries are observed to avoid double taxation by means of bilateral tax treaties in line with either the OECD Model Tax Convention or the EU Parent-Subsidiary Directive for the facilitation of investment capital mobility. In particular, the countries included in this study adopt either a credit system (e.g., US, Japan, Greece, Spain, UK) or an exemption system (e.g., Germany, France, Portugal, etc.) to avoid international double taxation.

In the present study, we do not account for the effect of tax treaties on the FDI allocation and corporate tax competition. Summarising the findings on this issue, we primarily focus on the well-documented conclusion of the three thorough meta-analysis studies conducted by de Mooij and Ederveen in 2003, 2005 and 2008, which found a non-significant effect of the double-taxation treaties on the FDI. Consequently, this study adopts the point of view that, whereas tax treaties facilitate at large the capital mobility worldwide, they have no significant role in the selection of affiliate allocation and the amount of capital invested.

The empirical model examined in this study is constituted of the *FDI* variable; being the endogenous variable in the form of log-differentials in pairs of countries, the Tax Rate variables (i.e. *STR, EATR* and *EMTR*) in country-pairs' differentials and, a vector of exogenous variables in the form of log- ratios (in pair of countries).

The research framework centres on the prominent nonlinearity issues characterising the FDI inflow responsiveness to tax differentials, economic, infrastructure and technology factors. The study offers robust evidences for the power and the nature of the nonlinear FDI responses to tax differentials' changes. Additionally, undertakes a

comparative analysis for the three alternative tax rates which in the field literature capture different characteristics in the FDI competition strategy. Accordingly, tests the weighting of alternative FDI determinant agents and offers findings in favour of the diminishing power of the corporate tax rates when used as a single fiscal policy instrument from countries competing for FDI. The findings underscore the role of alternative or additional FDI influential agents to be considered and acknowledged also, in the scope of a middle-long term successful strategy. The discussion on the findings, support the '*no tax-rates race to bottom*' scenario, in the view that institutional, economic growth and agglomeration factors, seem to play an important role in the attraction of FDI flows. Furthermore, there are rigorous evidences that competing countries, are better off when adjusting their statutory tax rates instead of their effective average tax rates. The empirical evidences highlight the existence of a *'yardstick effect'*, which 'paradoxically' renders STR as a superior tax policy instrument compared to EMTR and EATR.

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