# Corporate Tax Revenue responses to Income Tax Rates' settings. A country-specific panel investigation for a group of OECD countries.

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## Abstract

The study explores the existence of common behavioural patterns in the corporate income tax revenues and corporate income tax rates' relationship for a group of 12 OECD countries (10 of which belong to the EU), during the period 1982–2005. The tax rate settings account for adjustments in effective average tax rates, statutory tax rates and effective marginal tax rates. The research is carried out within a static framework allowing for existing nonlinearities. A well-defined parabolic relationship is calibrated and customised to accommodate existing country-specific characteristics. Whereas the common response patterns are justified for the middle and long run, they vanish when effective marginal tax rates are employed in the tests. Tax revenues are found to follow a well-defined behavioural pattern however, with optimization levels at tax rates' thresholds which vary considerably across the examined economies. In policy terms, the evidences underscore the diversification of the outcome should policy makers anticipate when similar tax rate settings apply across different countries. At the EU level, the appropriate implementation of regulatory initiatives (aiming to; eliminate tax evasion, broaden tax bases, increase public revenues, etc), which tend to touch upon the effective corporate tax rates, will benefit from a progress in the fiscal and economic integration in the EU. The latter can safeguard the uniformity of the envisaged outcome and the maximization of the distributed benefits across the EU Member States.

**JEL:** H21, H25, ;H32

**Keywords:** Corporate Income Tax Revenues, Effective Average Tax Rates, Statutory Tax Rates, Effective Marginal Tax Rates, Common Corporate Income Tax Policy, Fiscal Consolidation.

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In the past, the corporate income tax policy used to vary considerably across the OECD countries on the grounds of the imposed statutory and effective tax rates these being deduced from the statutory tax rates and the provided tax allowances and tax exemptions. During the period of the study; 1982–2005, a considerable trend in converging corporate tax rates is noticed for the sample of the countries examined. These countries seem to 'compete' each other by adjusting their corporate tax rates to constantly lower levels. Whether this behaviour can be attributed to a mimicry (yardstick competition) in the countries' strive to attract foreign investing capitals or, to policy decisions looking for ways to broaden the domestic income tax bases (or perhaps both), is to be explored. Whatever the justification is, there exists a noticeable gradual decrease in statutory and effective corporate tax rates along with a gradual increase in corporate tax revenues (in absolute values)[2]. A critical question is related to the time length that corporate tax revenues will continue to raise for the 'competing' countries while these decrease their corporate income tax rates. Is there a possible monotonic trend, and if not, are there any Pareto optimal positions? Undoubtedly, the above questions, as well as other similar, fuelled the policy making concerns when issues such as the Common Consolidated Corporate Tax Base, are debated. The outcome of this empirical analysis can be useful for policymaking when corporate tax rates are considered as a single fiscal policy tool.

The examination of the tax revenues-tax rates relationship takes place within a static framework in this study. We are particularly interested in the approach of Clausing (2007), who studied corporate income tax revenues relative to GDP changes for a group of OECD countries during the period 1979–2002. This study concluded on an aggregate parabolic relationship between corporate tax rates and corporate income tax revenues, implying-but not discussing-the existence of revenue-maximising levels in the tax rates' change. Clausing (2007) seems to be the first study in the relevant literature, that empirically calibrated a *Laffer-type* relationship, however only at an aggregate level and not accounting for the varying, country-specific characteristics.
Generally, this relationship has been explored on the grounds of an economic activity that is negatively affected by the imposed tax burden whereas, decreasing corporate income tax rates could account for a double-sided effect with an unpredictable sign.

[2] The average corporate tax revenues/GDP ratio for the examined countries fluctuates around 2%.

On the one hand, there are profits anticipated from the increased economic activity, the broadening of the income tax base, the (expected) decrease of tax evasion/avoidance, etc. On the other hand, there might be losses of tax revenues that would have been else received if the tax rates were higher. The relationship between tax revenues and tax rates is said to be parabolic and steeper for small open economies compared to large closed ones.

The empirical discussion in this area ranges from extensions of the basic parabolic model (e.g., Brill and Hasett, 2007) to studies that question its existence (e.g., Gravelle and Hungerford, 2007). For the purposes of this study, the Laffer curve provides only a theoretical basis for our analysis, which starts from a reduced-form baseline model and expands up to extended versions accomodating countries' individual features on aggregated levels.

This study offers a comprehensive investigation of the corporate tax revenue-tax rates relationship in a static country-specific nonlinear panel framework which builds on a simple model initially discussed in Hristu, Karagianni and Saraidaris (2010) for the purposes of modelling the corporate income tax competition within countries competing for FDI.

In the present study, we conduct a comprehensive empirical investigation of the likely sources of the corporate tax revenues behaviour in a set of 12 OECD countries and, for a range of variables that control for production, market potential, market openness, etc. Consequently, the present study contributes to the empirical literature by offering new empirical findings on the nature of the relationship among corporate tax revenues, corporate tax rates and FDI inflows. The empirical calibration of the theoretical Laffer corporate tax revenue curve[3] for each 'FDI-competing' country, accounting for the countries' individual 'characteristics', is novel in the empirical literature of this field. Furthermore, the findings of this study, especially those related to the decoupling of the country-specific effects, offer insights in the discussion on the global tax competition, and the need for a common corporate

[3] Other studies in the field literature that attempt to calibrate the theoretical Laffer corporate tax revenues curve are those of Brill and Hassett (2007) and Clausing (2007).

income tax policy, which constitutes a hot topic in both academic literature and in the EU income tax policy agenda.[4]

In a study of the relationship between the average statutory corporation tax rate and the average ratio of corporation tax revenues to GDP, Devereux (2006) concluded that there are: *'differences across countries; it may be the case, that there is a non-linear relationship within each country, . . . the relationship varies across countries, and so is not captured in a panel regression. Further work is needed to investigate these and other possibilities in more detail'*. The empirical findings in this study, offer evidences to the above direction and contribute to answering the question: *'Is there a systematic relationship between tax rates and revenues across OECD countries?'*.

The study findings contribute hence to a thorough and robust empirical justification of a long-run parabolic relationship between corporate tax revenues and corporate tax rates within a country-specific context. We found that the long run tax revenue behaviour reverses at tax rate levels individually specified by countries' economies. Hence, the rise of income tax revenues in the OECD during last decades- despite the decline of corporate taxes- should be considered with scepticism as regards the future trends. Our findings underscore that the occasional adjustment of the corporate tax rates might be a convenient fiscal policy instrument but with a rather questionable efficiency. Hence, policy makers should only attempt a sophisticated application of this policy tool and in any case, after considering the country-specific economic parameters.

Our findings offer a twofold policy implication. First, for small-open economies to become competitive in the global tax competition[5], they should pursue more complex and perceptive policy actions instead of occasional adjustments of corporate tax rates. In addition, policy makers should consider factors such as the country's tax enforcement power, corruption, market openness, capital formation, employment, infrastructure, business environment and technological advances in

[4] Later studies in the field literature and negotiations in the EU policy agenda elaborate on the evaluation of common corporate policy plans such as the Common Consolidated Corporate Tax Base (CCCTB), the Enhanced Cooperation Agreements (ECA) and the harmonisation of corporate income tax rates.

[5] See Nicodème (2007) for an extended literature review on tax competition.

production, which also influence the collection of public revenues in the long run. Second, the heterogeneity in tax revenue behaviours in the group of examined countries implies that in politico-economic or trade unions such as the EU, the widely argued corporate income tax rates' *'race to the bottom'* scenario-which has been extensively debated during the last decade-is probably, not a realistic one.

At the current, yet incomplete stage of fiscal and economic integration across the EU MS, possible corporate tax coordination actions at the EU level, should envisage the risk of restricting the corporate tax revenues collection at suboptimal levels for a number of MS. Possible harmonisation actions in the applied corporate tax policies might be considerably benefited by further advanced levels of fiscal and economic integration within the EU.

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