Which Multinationals can Escape High Statutory Tax Rates? The Profit-Shifting Strategy to Reduce Taxes

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Abstract

Multinationals can escape high Statutory Tax Rates (STRs) by way of Profit-Shifting (P-S) and in this form, reduce the Effective Tax Rate (ETR) they ultimately pay. In this article, we find evidence for Spain consistent with P-S, since the relationship between STRs and ETRs becomes negative for multinationals with characteristics that may facilitate P-S, i.e., being very large, having at least one tax haven affiliate, and owning Intellectual Property.

Keywords: Profit-Shifting, Multinationals, Statutory Tax Rate, Effective Tax Rate

JEL Classification: F23, H25, H26, H87

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1. Introduction

Multinational Companies (MNCs) can reduce their tax burden by way of artificial Profit-Shifting (P-S), i.e., they can move revenues and expenses between entities within the group in such a way that they declare abnormally high revenues (expenses) in low-taxed (high-taxed) territories, irrespective of where they are actually generated, using such strategies as transfer pricing or thin-capitalisation.[1] Castillo-Murciego and López-Laborda (2017) find evidence consistent with P-S for Spanish MNCs. They also obtain that tax havens may play a key role in this activity (Castillo-Murciego and López-Laborda, 2021).

This article aims to test whether there are specific characteristics of MNCs that might make P-S easier for them, which is a central issue for bringing a halt to this activity, one of the main problems in international tax cooperation. To this end, we examine the relationship between worldwide Effective Tax Rates (ETRs) and Statutory Tax Rates (STRs) for Corporate Income Tax, assuming that MNCs with characteristics that may facilitate P-S will be less conditioned by their global STR.

Our first hypothesis is that, by definition, the global ETR of MNCs is positively influenced by the STR of countries where they operate, provided that the residence country exempts dividends when repatriated, Spain being an example of this practice, which is also applied by other OECD countries.[2] The second hypothesis is that the above effect might be lower (or even negative) for MNCs with characteristics that might facilitate the artificial shifting of profits to low-taxed territories. This way of identifying P-S -examining the relationship between tax rates- gives originality to our article.

[1] The literature on Profit-Shifting is plentiful and there is consensus about the existence of that activity. See, for instance, Beer, De Mooij, and Liu (2020).

[2] See, for instance, Bachmann and Baumann (2016).

There are a great many papers examining the determinants of ETRs, most of them belonging to the accounting field.[3] These papers also consider factors related to aggressive tax planning, such as the use of tax havens, leverage or intangibles, the corporate domicile, and tax enforcement. However, they do not interact these factors with the STRs, which in addition to identifying P-S, allows us to further investigate the effect of firm characteristics on ETRs depending on the level of STRs.

The structure of the rest of the article is as follows. Section 2 presents the data and methodology; section 3 shows the results and section 4 concludes.

2. Materials and methods

The sample comprises an unbalanced panel of 672 MNCs, for the period 2011-2020, taken from the Amadeus database (from the Bureau Van Dijk). All of these MNCs meet the following criteria: they have a Spanish parent company,[4] are large or very large,[5] and present consolidated financial information, which is needed for the estimates.

We estimate worldwide ETRs as a function of worldwide STRs and the traditional determinants of ETRs as control variables: size, leverage, asset composition and profitability.[6] Additionally, we are interested in some firm characteristics that may facilitate Profit-Shifting (P-S), and their interaction with STRs: the use of Intellectual

[3] For example, Christensen, Kenchington, and Laux (2022); Collins and Shackelford (1995); Drake, Hamilton, and Lusch (2020); Dyreng and Lindsey (2009); Dyreng et al. (2017); Gupta and Newberry (1997); Markle and Shackelford (2012); Markle and Shackelford (2014); and Rego (2003).

[4] Specifically, we consider a minimum percentage for the path from a subject company to its parent of 50.01%.

[5] According to the Bureau van Dijk, very large companies are those with turnover higher than €100 million, total assets higher than €200 million or number of employees higher than 1,000; and large companies are those with turnover higher than €10 million, total assets higher than €20 million or number of employees higher than 150.

[6] See Fernández-Rodríguez, García-Fernández, and Martínez-Arias (2021).

Property,[7] the category of firm according to size, and the use of tax havens.[8] Then, we estimate the following model:

$$\boldsymbol{ETR_{jt} = \alpha * (STR_{jt}) + \beta * (Firm\ features\ related\ to\ P - S_{jt}) +}$$

$$\boldsymbol{+\gamma * (STR_{jt} * Firm\ features\ related\ to\ P - S_{jt}) + \delta * (Traditional\ determinants_{jt}) + \in_{jt}}$$

Where j is the corresponding Spanish MNC and t the time period. The coefficient $\boldsymbol{\alpha}$ captures the effect of STRs on ETRs, while $\boldsymbol{\beta}$, $\boldsymbol{\gamma}$ and $\boldsymbol{\delta}$ represent, respectively, the set of coefficients for the firm characteristics related to P-S, such firm characteristics interacted with STRs, and the traditional determinants of ETRs. All the model variables are defined in Table 1.

[7] This characteristic may also give access to tax benefits, such as deductions, tax credits or exemptions.

[8] We take the tax haven list of the seminal paper of Hines and Rice (1994), but extended to Belgium and the Netherlands (Tørsløv, Wier, and Zucman, 2022).

Table 1. Dependent and independent variables

Variable	Indicator
Dependent	
Effective Tax Rate (ETR)	Consolidated taxes / profits before tax. The observations are limited to those with values between 0 and 100
Independent	
Statutory Tax Rate (STR)	Average of the foreign STR of countries where the company has subsidiaries, weighted by the number of subsidiaries in each country Source: KPMG: https://home.kpmg/it/it/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html
Log (Size)	Logarithm of total assets
Leverage	Non-current liabilities plus loans / shareholders' funds
Capital Intensity	Tangible fixed assets / total assets
Inventory Intensity	Stock / total assets
Profitability	Return on Assets
Intellectual Property (IP)	1 if a company has at least either a patent or a trademark; 0 otherwise
Category (C)	1 if a company is very large; 0 if it is large
Tax Haven (TH)	1 if the parent company has at least a subsidiary in a tax haven; 0 otherwise

For the average STR of countries where the company operates, we use the number of affiliates as a weighting factor rather than another financial indicator (such as the number of employees or sales) because not all of these data are available in the Amadeus database for some countries.

Table 2 shows the descriptive statistics of the variables. The estimates are based on pooled linear regression models.[9]

[9] We also tried panel data estimates, and according to the Hausman test, fixed effects are preferred to random effects. However, results are not statistically significant for these preferred estimates. That means

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ETR	3,441	26.13	15.04	0.00	99.84
STR	6,720	26.51	6.42	0	41.33
Size (thousand €)	4,710	1,550,469	8,684,377	2	1.30E+08
Leverage	4,544	104.60	126.05	0	990.71
Capital Intensity	4,696	24.14	18.90	0.00	93.24
Inventory Intensity	4,470	16.84	14.99	0.00	96.54
Profitability	4,700	4.15	9.82	-93.49	91.2
IP	6,720	0.54	0.49	0	1
C	6,720	0.53	0.49	0	1
TH	6,720	0.26	0.44	0	1

3. Results

Table 3 shows the results for three models, each of which incorporates the corresponding firm-level variable related to Profit-Shifting (P-S) and an interaction term between it and the STR. As expected, on average, a positive and statistically significant coefficient is found for STRs. However, in the presence of each one of these multinational characteristics related to P-S, the higher the STR, the lower the ETR. Moreover, having Intellectual Property (IP), being very large and owning tax haven affiliates reduces ETRs when STRs are relatively high (specifically, when STR is higher than 22.16%, 29.50% and 23.31% for each variable, respectively), which is also in line with P-S.

that there is no relation between the ETR and the STR within companies, which may be related to the fact that tax rates barely change over time for each multinational.

Table 3. Effect of the STR on ETR depending on firm characteristics [a, b]

	(1) IP	(2) Category	(3) TH
STR_{jt}	0.2319*** (0.0662)	0.2006*** (0.0539)	0.1268** (0.0505)
IP_{jt}	5.5610** (2.3754)		
$Category_{jt}$		7.0914*** (2.3934)	
TH_{jt}			5.9149* (3.1491)
IP_{jt}*STR_{jt}	-0.2509*** (0.0924)		
C_{jt}*STR_{jt}		-0.2404** (0.0943)	
TH_{jt}*STR_{jt}			-0.2538** (0.1222)
N	3,260	3,260	3,260
R^2	0.0579	0.0578	0.0562
Year dummies	Yes	Yes	Yes

[a] We also examined other firm characteristics, such as being a listed company or not and the operating revenue level, but their coefficients were not statistically significant.

[b] We only show the results for the main independent variables. The estimated coefficients of the control variables are also statistically significant. Regarding their sign, there is no consensus about them in the literature.

Note: ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively. Robust Standard Errors are in parentheses.

Table 4 estimates these models by economic sectors. For the manufacturing sector, when a MNC owns at least one tax haven affiliate, the higher the STR, the lower the ETR, which again corroborates P-S. However, the effect of STRs on ETRs remains positive when the MNC has IP. For the service sector, the negative relationship between STRs and ETRs appears when the MNC owns IP and when it is very large. Furthermore, having tax haven affiliates and IP (in the manufacturing sector) and owning IP or being very large (in the service sector) reduces the ETR when the STR is greater than around 27%. The results for other economic sectors, such as finance, were not statistically significant.

Table 4. Effect of the STR on ETR depending on firm characteristics by economic sector

	(1) Manufac. IP	(2) Manufac. Category	(3) Manufac. TH	(4) IP Service IP	(5) Service Category	(6) Service TH
STR_{jt}	0.3728*** (0.1266)	0.1392 (0.0971)	0.2558*** (0.0831)	0.2150** (0.0925)	0.2538*** (0.0842)	0.1091 (0.0724)
IP_{jt}	7.3083* (4.4082)			8.7024** (3.4073)		
$Category_{jt}$		0.1048 (4.8699)			8.8195*** (3.2762)	
TH_{jt}			21.1642*** (7.7840)			3.1035 (4.7520)
IP_{jt}*STR_{jt}	-0.2697* (0.1597)			-0.3201** (0.1343)		
C_{jt}*STR_{jt}		0.0420 (0.1806)			-0.3344** (0.1336)	
TH_{jt}*STR_{jt}			-0.7694** (0.3093)			-0.2134 (0.1876)
N	781	781	781	1,529	1,529	1,529
R^2	0.0642	0.0635	0.0709	0.0642	0.0646	0.0637
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes

Note: See Table 3.

4. Discussion

This article shows how the relationship between worldwide Effective Tax Rates (ETRs) and Statutory Tax Rates (STRs) changes when considering characteristics of Multinational Companies (MNCs) that may facilitate aggressive tax planning. Previous literature also examined the effect of these characteristics on ETRs, but not their influence via STRs. This last analysis, in addition to introducing a new form of identifying Profit-Shifting (P-S), allows us to estimate more accurately the effect of these characteristics on ETRs via taxes. For instance, we can observe that the negative effect of these characteristics on ETRs is only reached for high levels of STRs.

Certainly, high STRs may be associated with low ETRs if MNCs take advantage of tax incentives worldwide, but our results suggest that the aggressive tax planning hypothesis cannot be ruled out.

This paper can help governments identify which MNCs are profit-shifters by taking into account both the characteristics of firms and the level of STRs where they operate. The results are expected to be the same for other countries with a similar international tax system, i.e., the tax exemption system. To confirm this, a natural extension of this article may be to replicate the analyses for those other countries and the few that continue to apply the tax credit system.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to commercial restrictions.

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