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Explaining Reservations to the OECD Model Tax Convention: An Empirical Approach

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Abstract[*]

Even though the OECD Model Tax Convention is not legally binding, both member and non-member States of the OECD have included reservations to express their disagreement with certain aspects. In order to explain why the number of reservations included varies so greatly from country to country, we have formulated several hypotheses which we have tested empirically. The results of our analysis show that being an OECD member (which is strongly and positively correlated with GDP per capita) or a net capital exporter are factors associated with fewer reservations. Thus, despite having a worldwide influence, the OECD Model serves better the interests of developed States.

Aunque el Modelo Convenio Tributario de la OCDE no es jurídicamente vinculante, numerosos Estados, tanto miembros como no miembros de la OCDE, han incluido reservas para expresar su desacuerdo con ciertos aspectos, si bien su número difiere notablemente en función del país. Para explicar esta diferencia en el número de reservas hemos formulado y contrastado empíricamente diversas hipótesis. Los resultados del estudio muestran que ser un Estado miembro de la OCDE (característica que está fuerte y positivamente correlacionada con el PIB per cápita) o ser un exportador neto de capitales son factores asociados con menos reservas. Así pues, a pesar de su influencia global, el Modelo de la OCDE se adapta especialmente a los intereses de los países desarrollados.

Título: El porqué de las reservas al Modelo de Convenio Tributario de la OCDE: una aproximación empírica

Keywords: OECD Model Tax Convention, International Double Taxation, Tax Treaties, Reservations
Palabras clave: Modelo de Convenio Tributario de la OCDE, doble imposición internacional, tratados para evitar la doble imposición, reservas

JEL classification: K33, K34

Summary

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1. Introduction and statement of the problem

In order to prevent international double taxation, tax treaties distribute the taxing rights between the taxpayer's country of residence and the country in which the income had its source. These treaties are almost always bilateral, but they are generally based on the OECD Model Tax Convention on Income and Capital. This model is not legally binding, so even though the OECD recommends that its member States follow it, they are free to deviate from it in their bilateral tax treaties.

However, together with the model, reservations to articles and observations on their commentaries by OECD member States are also published. Moreover, since 1997, non-members have also been able to express their disagreement with certain aspects of the model and include positions on articles and commentaries. In this paper we will concentrate on disagreements with articles since they are probably more serious than disagreements with the merely official interpretation presented in the commentaries. Throughout the text, we will use the term "reservation" in a broad sense, referring both to member States' reservations and non-members' positions, because they have the same purpose: to show disagreement with the provisions of the OECD Model. In this sense, it is important to note that we are not using the term "reservation" with the technical meaning of Art. 2(1)(c) of the Vienna Convention on the Law of Treaties (1969), precisely because the OECD Model Tax Convention is not a treaty but just a model.

As can be observed in the following two graphs, the number of reservations by OECD member and non-member States to the OECD Model Tax Convention (as of 2010) is not homogeneous. Some member States, such as Austria and Iceland, have not included a single reservation. In contrast, Greece, the United States and Mexico disagree with more than 20 aspects in the articles of the model and their corresponding commentaries. Similarly, some OECD non-members have only included a few positions (fewer than many OECD members) while others, such as India, Brazil or Thailand, disagree with more than 35 aspects of the model.

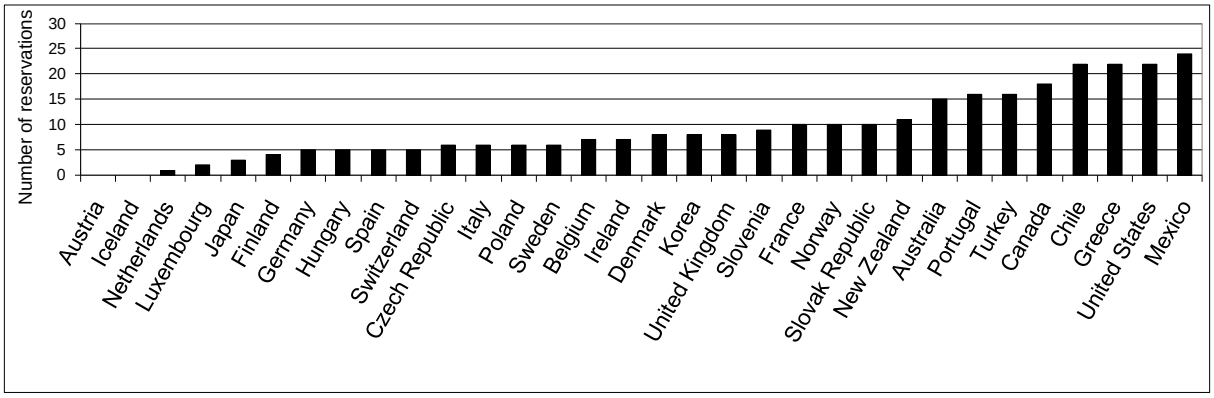

FIGURE 1. Number of reservations to articles by OECD member States.

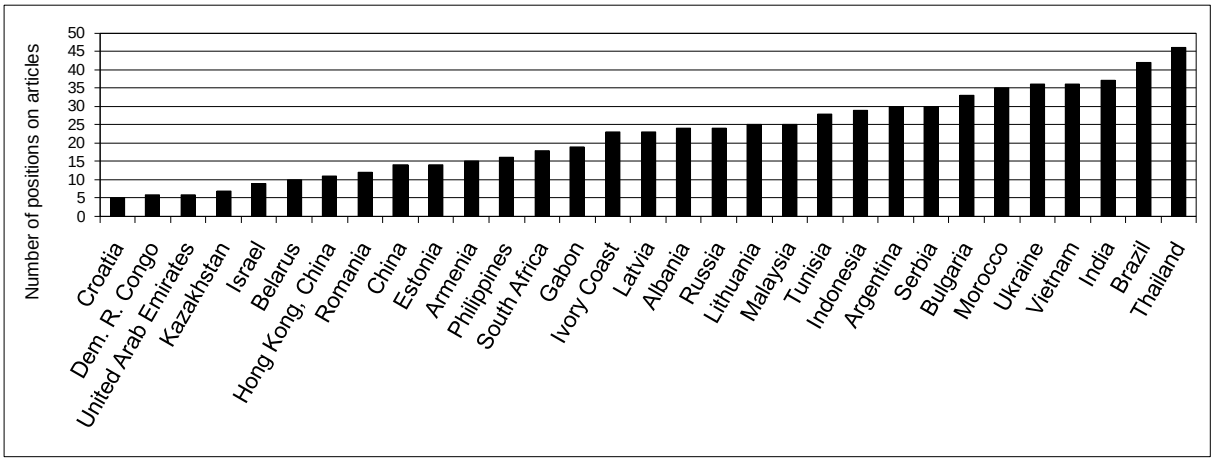

FIGURE 2. Number of positions to articles by non-member States of the OECD.

These differences in the number of reservations are useful in helping us understand whose interests are favoured by the OECD Model. Moreover, the number of reservations should indirectly reflect a country's influence in the decision-making process of the OECD. The reason for this is that countries more influential during the drafting of the model will not disagree with so many aspects of the final version and therefore will include fewer reservations. However, existing literature on double tax treaties, mainly by legal scholars such as VOGEL (1997), has concentrated on the detailed interpretation of the different provisions and the case law dealing with them.

From a more analytical perspective, one of the main authors to study the role of double tax treaties in the framework of international tax governance is RIXEN (2008). Other authors, such as DAVIES (2004) and NEUMAYER (2007), have also studied particular aspects such as the impact that ratifying double tax treaties has had on foreign direct investment. Moreover, game-theoretic tools have also been used by authors such as DAGAN (2000) and BAISTROCCHI (2008) to explain the effects of double tax treaties on developing countries.

Reservations to articles of the OECD Model Tax Convention have, however, not received the attention of analytical literature. Thus, the purpose of this paper is to fill this gap and test empirically several common assumptions about double tax treaties. We attempt to explain why certain States may include more or fewer reservations to the OECD Model. Even though the focus on the total number of reservations is based on the simplifying assumption that they are all of more or less equal importance, we consider that this is still an accurate indicator of a country's level of agreement with the OECD Model. Consequently, this paper takes the same approach as scholars such as VOIGT (2009), who attempted to explain empirically the characteristics of certain legal texts, such as the length of constitutions.

In particular, we will focus on only those countries which actively participated in the 2010 revision of the model. As the OECD does not provide information on the non-member countries that take part in annual meetings to discuss the OECD Model[1], we will only be able to consider all member States and those non-members which included at least one position. This could introduce a bias, since it cannot be ascertained if other non-member countries participated in the meetings but did not include any position because they agreed with all the provisions of the OECD Model. However, any bias introduced would be rather small, it seeming improbable that many non-members attending the meeting would agree with the whole model, when all but two member States expressed some form of disagreement with it.

In this sense, we consider that the option to include every country in the world in our study (so as to take into account non-members who did not raise any position), and to assume that every nation could have participated in OECD meetings and included positions if they had wanted, would have been misleading. If countries such as the Democratic People's Republic of Korea or Somalia have not expressed any position, this is most probably not because they agree with all the aspects of the model, but for other heterogeneous reasons which may be difficult to measure empirically. For instance, these countries may not be interested in establishing double tax treaties or they may not have the technical expertise and resources to participate in the OECD.

Consequently, we have decided to focus on those countries which have participated in the OECD (as members or as non-members with at least one reservation) because in those instances the number of reservations or positions should actually reflect these countries' level of agreement with the OECD Model. Therefore, while this study cannot explain why countries generally include reservations to the model, it will examine the reasons why the countries that participate in the OECD decide to include more or fewer reservations.

2. Hypotheses

In order to explain why certain countries have included more reservations than others, we will consider the following explanations.

Hypothesis 1. Net capital importing countries are expected to have more reservations than net capital exporting ones.

It is generally considered that the OECD Model tends to favour the interests of net capital exporting countries, since it tends to promote taxation in the country of residence of the taxpayer. Hence, developing countries requested the United Nations to address this issue. The result was the publication of the UN Model Tax Convention in 1980, which gives more weight to the principle of taxation of income in the country where it had its source. Consequently, net capital

[1] These meetings with some non-member countries are mentioned in paragraph 2 of the introduction to the non-OECD economies' positions included in the 2010 version of the OECD Model.

importing countries should be expected to have included more reservations to the OECD Model, for instance in order to reserve their right to tax certain types of income at source or with respect to the definition of permanent establishment (Art. 5), since a broader definition would increase the number of cases in which business profits could be taxed in the country of source[2].

Given that most tax treaties are bilateral, it is important to note that being a net capital importing or exporting country will depend on the other party in the treaty, while reservations to the model are made in general, without considering any specific case. Thus, introducing a reservation to the model should be influenced by the general position of a country as a net capital importer or exporter, regardless of any specific treaty partner.

Hypothesis 2. Countries with high net royalty payments are expected to have a higher number of reservations.

According to Art. 12(1) of the OECD Model Tax Convention, royalties are only taxable in the country of residence of the taxpayer. Exceptionally, Art. 12(3) accepts the possibility of taxing royalties in the country of source if they arise through a permanent establishment. However, the United Nations Model Tax Convention establishes that, in addition to taxation in the country of residence of the taxpayer, royalties may also be taxed up to a certain limit in the country in which they arise [Art. 12(2)]. Therefore, it would be logical to expect that countries which make net royalty payments (this would be the case of most developing countries, since they will tend to be net technology importers) would include more reservations to Art. 12 of the OECD Model.

Hypothesis 3. OECD member States are expected to have fewer reservations than non-members.

It is logical to expect that the OECD Model Tax Convention is particularly adapted to the needs of OECD member States, which are in general countries with common characteristics such as a high GDP per capita. Therefore, these countries should have included fewer reservations.

Hypothesis 4. The higher the total annual GDP, the lower the number of reservations.

This hypothesis is based on the idea that those countries with a higher GDP will be more influential during negotiations over the Model. Thus, they will disagree with fewer aspects of its content. In the case of the OECD member States, this influence could be explained by the fact that budget contributions to the OECD depend on the GDP of each member. Contrary to GDP per capita, the level of overall GDP measures the size of an economy and not the level of development of a country.

[2] It should not be excluded that certain countries, such as the United States, may have included reservations for the opposite reason, that is, because they would prefer to favour the principle of taxation in the country of residence more than the OECD Model favours it.

Hypothesis 5. The broader a country's tax treaty network, the higher the number of reservations.

This hypothesis is based on the assumption that those countries with more tax treaties in force will pay more attention to international tax matters and, therefore, will include more reservations than those countries with a small tax treaty network. Moreover, the new OECD Model may lead to a re-interpretation and renegotiation of existing treaties. Therefore, countries with more tax treaties in force may have a stronger incentive to include reservations manifesting their disagreement with certain aspects of the new version of the model.

Hypothesis 6. Countries with a more open economy are expected to include more reservations to the OECD Model.

For countries with a more open economy (defined as the sum of exports and imports as a percentage of GDP), double taxation will be a more common problem. Thus, these countries will likely pay more attention to the development of the OECD Model and will present more reservations if they do not agree with a certain aspect. In contrast, this should not be a priority for countries with a more closed economy.

Hypothesis 7. The higher the fiscal pressure in a country, the higher the number of reservations.

Double taxation will be a particularly serious disadvantage for countries which already have high fiscal pressure. In these cases, double taxation may even prevent certain economic transactions from taking place. In contrast, in countries with very low fiscal pressure, double taxation may not be such a serious disadvantage. Therefore, countries with higher fiscal pressure should be expected to pay more attention to the elimination of double taxation and thus, to include more reservations in case of disagreement, while countries with low fiscal pressure may not play such an active role in drafting the model and would ignore its development.

Hypothesis 8. Common law countries are expected to have fewer reservations than countries with other legal backgrounds.

This hypothesis assumes that the OECD Model is better adapted to the domestic legal systems of common law countries than to other legal backgrounds (civil law, socialist law…). Thus, countries with other legal traditions may introduce reservations for domestic legal reasons. For instance, some countries have included reservations to the model because certain expressions (such as "company", "trust" or "nationality") are differently defined in their domestic legislation or are not used at all (for example, the term "capital" does not exist in the legal system of Belarus).

Apart from the reasons explored in our above hypotheses, there may be other factors influencing the number of reservations introduced by a country which are difficult to test empirically due to the lack of available data. For instance, the personal characteristics of the delegates who participate in the negotiations, such as their experience or degree of technical expertise, may further explain why certain States have included more reservations than others.

3. Data description and estimation approach

Our dependent variable is the number of reservations expressed by each country to the articles of the OECD Model Tax Convention published in July 2010. As mentioned in section 1, for non-member States these disagreements are referred to as "positions" on articles, but since they have the same purpose as the reservations included by member States, we will use the term "reservations" in a broad sense, to refer also to positions by non-members. According to our data, the average number of reservations per country was 15.63 with a maximum of 46. For purposes of precision, for certain hypotheses the dependent variable we will consider is the number of reservations to the article which is most closely related to the hypothesis being tested. In this paper we do not explicitly refer to observations some countries made on the commentary, however, our findings would have been very similar.

With respect to the population of our analysis, as we justified in section 1, we are considering all OECD member States and those non-members which participated in updating the OECD Model with the inclusion of at least one reservation. We have data on the 32 members of the OECD as of July 2010 and the 31 non-members which expressed their disagreement with certain provisions of the model.

Since to our knowledge we are the first to attempt to analyze the possible reasons for introducing reservations to the articles of the OECD Model, we had first to identify potential explanatory variables. Basically, we are testing whether the variation in our independent variables can explain the variation in our dependent variable, namely the number of reservations to the articles. It turns out that the number of reservations is considerably lower for OECD member States than for non-members. Thus, we decided to conduct a cross-section analysis. Since our dependent variable is a positive integer we have used count data models with heteroskedasticity-robust standard errors[3]. In particular, we use the Negative Binomial regression model to account for the overdispersion of the count variable[4]. Thus, our objective is to estimate the following equation:

$$\mathrm{E}(\mathrm{reserv}_i) = \exp(\alpha + \beta M_i + \chi Z_i)$$

where reserv_i is the number of reservations to articles of country i, M_i is a vector of variables proxying for the hypotheses outlined before, and Z_i is a vector of control variables of country i. The detailed information about the variables which we are using can be found in *Appendix 1*.

Throughout all regressions we control for OECD membership. This makes it possible to adjust for the differences between the two groups of countries. We have also used the level of GDP per capita instead of OECD membership as a robustness check. Because many variables are right-

[3] Since count data models are calculated by maximum likelihood (ML) and it might not be completely accurate to use ML with samples smaller than 100 observations, we also applied OLS with a logarithmic transformation of the dependent variable to check the robustness of the results. All results from the count data models were confirmed and the results of the OLS regressions can be provided on demand.

[4] See, for example, CAMERON (2005).

skewed, we have where appropriate performed logarithmic transformations to account for this asymmetry in the distribution.

Hypothesis 1 relates the number of reservations to being a net capital importer or exporter. In order to test this hypothesis we have used data on net foreign direct investment (FDI) available from the World Bank. Moreover, in order to account for the relative importance of net FDI to the economy of a country, we will also consider the ratio of FDI to GDP.

With respect to hypothesis 2, which relates net royalty payments to the number of reservations, we have used data on royalty payments compiled by the World Bank. In particular, we have used the amount of royalty receipts, royalty payments and net royalty payments (payments minus receipts) as a percentage of GDP. This would better account for the relevance of royalties in the context of a certain economy.

In order to test hypothesis 3 we have distinguished between OECD member and non-member States in July 2010 (date of the latest version of the model). With respect to hypothesis 4 we have used data for GDP in 2009, the year before the current model was approved.

To check hypothesis 5 we have considered the total number of tax treaties on income and capital in force in June 2010 which are available on the database of the International Bureau of Fiscal Documentation. With regard to hypothesis 6, as a measure of the openness of a country's economy we have used the sum of exports and imports as a percentage of a country's GDP, information which is available from the World Bank. This institution also provides the necessary data to test the influence of fiscal pressure (hypothesis 7). In particular, we have taken into account the total tax rate (as a percentage of profits) payable by businesses, the highest marginal tax rate on corporate income and the highest marginal tax rate on individuals' income. Finally, to test hypothesis 8 we have used the classification of legal systems presented by LA PORTA *et al.* (1999).

Of the bivariate correlations of the variables being used (*Appendix 3*), OECD membership is the one which correlates most strongly with the total number of reservations. This correlation is negative (more developed countries tend to have fewer reservations to the OECD Model). In this sense, OECD membership and GDP per capita are strongly and positively correlated with each other (correlation coefficient of 0.6659). Moreover, other explanatory variables which we are using also correlate moderately with GDP per capita and OECD membership, such as royalty receipts as a percentage of GDP, GDP in current US dollars, tax treaties in force and FDI.

4. Estimation results and interpretation

In order to test hypothesis 1 we will use as a dependent variable the number of reservations to Art. 5 of the OECD Model, which defines the notion of permanent establishment. The reason for this is that this concept is very relevant for the taxation of FDI. If these investments take place through a permanent establishment, the profits that can be attributed to this permanent

establishment will be taxed at source. Otherwise, profits obtained without a permanent establishment will be taxed in the country of residence of the taxpayer.

The results presented in the following table show that, after controlling for OECD membership, the variable measuring FDI in net terms has a positive effect in the number of reservations to Art. 5 of the OECD Model, but it is not statistically significant at standard levels[5]. However, if we look at FDI as percentage of a country's GDP, the effect becomes significant at a 10% significance level, which is reasonable taking into account the sample size. Increasing the ratio by 10 percentage points would increase the number of reservations on average by 1.1[6]. Therefore, our first hypothesis cannot be rejected[7].

	(1)	*(2)*
	res_art_5	res_art_5
oecd	-1.287***	-1.235***
	(-4.65)	(-4.38)
fdi_net_stock †	0.0076	
	(1.12)	
fdi_net_percGDP		4.105*
		(1.83)
_cons	1.441***	1.370***
	(9.66)	(8.21)
N	59	59
Log pseudolikelihood	-115.01	-114.52
z statistics in parentheses.		
* p<0.10, ** p<0.05, *** p<0.01		
Regressions using robust standard errors.		
† in million US $.		

TABLE 1. Regressions concerning hypothesis 1.

With respect to hypothesis 2, we will focus on the relation between royalty payments as a percentage of GDP and the number of reservations to Art. 12 of the OECD Model, since this provision deals exclusively with the taxation of royalties. In particular, to analyze the role of royalty payments we have three variables: royalty receipts as a percentage of GDP, royalty payments as a percentage of GDP and net royalty payments (payments minus receipts) as a percentage of GDP.

[5] The relatively high standard errors in the case of the Negative Binomial model can be partially explained by the small sample size. OLS regressions with a logarithmically transformed dependent variable show similar results for the coefficients but with somewhat smaller standard errors.

[6] Average marginal effects were calculated in STATA using the command *margins*.

[7] We have also used FDI in total levels and as percentage of GDP for longer time periods (1979-2009, 1989-2009, 1995-2009), obtaining similar results. The ratio of FDI to GDP remained fairly constant over the years. We report summary statistics for these variables in *Appendix 2*.

After controlling for OECD membership, the coefficients of the three aforementioned variables are in all cases negative, although according to our hypothesis, countries which make important royalty payments (especially in net terms) should have included more reservations to the model. Nevertheless, while the effect is highly significant in the case of royalty receipts, it is small and not significant at standard levels in the case of royalty payments. An increase in royalty receipts as a percentage of GDP by 0.1 percentage point reduces the number of reservations to Art. 12 on average by 0.85[8].

	(1)	*(2)*	*(3)*
	res_art12	res_art12	res_art12
oecd	-0.262	-0.767***	-0.853***
	(-1.44)	(-3.47)	(-4.08)
roy_rec_percGDP	-332.2***		
	(-5.212)		
roy_pay_percGDP		-65.90	
		(-1.40)	
roy_net_percGDP			-10.206
			(-1.42)
_cons	1.442***	1.449***	1.306***
	(19.71)	(13.88)	(16.18)
N	53	54	53
Log pseudolikelihood	-82.30	-93.55	-94.59
z statistics in parentheses.			
* p<0.10, ** p<0.05, *** p<0.01			
Regressions using robust standard errors.			

TABLE 2. Regressions concerning hypothesis 2.

The regressions used to test the remaining hypotheses can be observed in Table 3. With respect to the role of OECD membership, which we are using as a control variable (regressions 2 to 7), it is clear that being an OECD member State is a factor associated with a lower number of reservations. Thus, we cannot reject hypothesis 3.

In relation to hypothesis 4, we have introduced an interaction variable in order to capture the different effect that the variable *ln_GDPcurrentUS$* may have on OECD member and non-member States (regression 1). The reason is that this variable determines member States' budget contributions to the organization. Therefore, for OECD members this may be an additional influencing factor when drafting the model. However, the effect on both non-members and members is positive, which means that countries with a bigger economy tend to include more reservations, contrary to our initial hypothesis. In other words, this contradicts our expectation that States with a bigger economy would tend to be more influential during the negotiations and consequently would need to introduce fewer reservations. Nevertheless, the effect on non-member states is significantly higher. A 10% increase in GDP would lead to an increase in the

[8] Average marginal effects were calculated in STATA using the command *margins*.

number of reservations on average by 1.83 for non-member and 1.21 for member states[9].

Hypotheses 5, 6 and 7 all have in common that they are based on the idea that for certain reasons (because of the existence of tax treaties which may have to be renegotiated or reinterpreted, or because the problem of double taxation will be more serious for those States with more open economies or higher fiscal pressure) some countries may pay more attention to double tax treaties and therefore will analyze the OECD Model more carefully and include more reservations to it if they disagree with a certain aspect, while others may just ignore it. However, after controlling for OECD membership, the effect of these variables on the number of reservations is no longer statistically significant at standard levels (regressions 3 to 6) and in some cases the coefficients do not have the expected sign (regressions 2, 3 and 6).

Finally, hypothesis 8, according to which common law countries would tend to have fewer reservations to the OECD Model, must also be rejected. The coefficient is not statistically significant at standard levels and even positive (regression 7).

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
	res_art	res_art	res_art	res_art	res_art	res_art	res_art
oecd		-0.934***	-0.817***	-0.863***	-0.864***	-0.724***	-0.879***
		(-6.03)	(-4.75)	(-5.27)	(-5.51)	(-3.50)	(-5.60)
ln_GDPcurrentUS$	0.116**						
	(2.19)						
ln_GDPcurrentus _oecd	-0.039***						
	(-5.79)						
ln_trade_GDP		-0.302*					
		(-1.95)					
tax_treaties			-0.003				
			(-0.95)				
max_tax_corp				0.0037			
				(0.31)			
ln_total_tax_rate					0.091		
					(0.27)		
max_tax_indiv						-0.011	
						(-1.25)	
common_law							0.216
							(1.19)
_cons	0.155	4.441***	3.251***	2.992	2.748**	3.367***	3.055***
	(0.12)	(6.67)	(16.97)	(10.46)	(2.13)	(14.15)	(32.73)
N	62	58	63	61	63	58	63
Log pseudolikelihood	-216.62	-202.79	-221.15	-213.69	-221.47	-201.97	-220.92
z statistics in parentheses.							
* p<0.10, ** p<0.05, *** p<0.01							
Regressions using robust standard errors.							

TABLE 3. Regressions concerning hypotheses 3 to 8.

[9] Average marginal effects were calculated in STATA using the command *margins*.

5. Conclusions

Summing up, the main factor that explains the number of reservations to the OECD Model Tax Convention is membership of the OECD (which is strongly correlated with GDP per capita). It has also been shown that, after controlling for OECD membership, countries with a high ratio of net FDI to GDP tend to have a higher number of reservations to Art. 5, which defines the concept of permanent establishment (fundamental for the taxation of business profits). Moreover, an increase in royalty receipts as a percentage of GDP is associated with fewer reservations to Art. 12. Thus, this situation reflects that the OECD Model, despite having a worldwide influence, may favour the interests of net capital exporting countries, which are normally the most developed States.

However, other factors that could explain the number of reservations to the OECD Model have not proved to be relevant. For instance, countries with a higher GDP (and thus higher budget contributions to the OECD in the case of member States) do not seem to be more influential than countries with smaller economies because their number of reservations is not significantly lower at standard levels. Similarly, having a wider tax treaty network, a more open economy or higher fiscal pressure do not seem to be factors associated with a higher number of reservations.

Further research should consider alternative hypotheses to explain the number of reservations of each country to the OECD Model. Moreover, given that many of the independent variables which we have used are interrelated, further analysis should focus on the separation of the effects of each one.

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Appendix 1. Definition of the variables

Dependent variables

res_art	Total number of reservations to articles of the OECD Model Tax Convention (version of July 2010) by OECD member States or total number of positions to articles by non-members.
res_art5	Total number of reservations to Art. 5 of the OECD Model Tax Convention (version of July 2010) by OECD member States or total number of positions to Art. 5 by non-members.
res_art12	Total number of reservations to Art. 12 of the OECD Model Tax Convention (version of July 2010) by OECD member States or total number of positions to Art. 12 by non-members.

Independent variables

budget_contribution(%)	OECD member State's percentage share to Part I budget contributions (programmes of general interest) for 2010. Source: OECD (http://www.oecd.org).
common_law	Dummy variable taking the value of 1 if the country belongs to the English or common law legal family. Source: LA PORTA *et al*. (1999).
fdi_net_percGDP	Total net foreign direct investment (FDI), that is, net FDI in the reporting economy from foreign sources minus net FDI by the reporting economy to the rest of the world, as a percentage of the GDP (2009). Source: World Bank (http://data.worldbank.org/).
fdi_net_perc_GDP_1979_09 *fdi_net_perc_GDP_1989_09* *fdi_net_perc_GDP_1995_09* *fdi_net_perc_GDP_2002_09*	Ratio of total net foreign direct investment (FDI) to GDP for the periods 1979-2009, 1989-2009, 1995-2009 and 2002-2009. Source: World Bank (http://data.worldbank.org/).
fdi_net_stock	Total net foreign direct investment (FDI), that is, net FDI in the reporting economy from foreign sources minus net FDI by the reporting economy to the rest of the world, 2009. Data are in current U.S. dollars. Source: World Bank (http://data.worldbank.org/).
fdi_net_stock_ 1979_09 *fdi_net_stock_ 1989_09* *fdi_net_stock_ 1995_09* *fdi_net_stock_ 2002_09*	Total net foreign direct investment (FDI), that is, net FDI in the reporting economy from foreign sources minus net FDI by the reporting economy to the rest of the world, for the periods 1979-2009, 1989-2009, 1995-2009 and 2002-2009. Data are in current U.S. dollars. Source: World Bank (http://data.worldbank.org/).
ln_GDP_capita	Natural logarithm of the GDP per capita at purchaser's prices (current US dollars), 2009. Source: World Bank (http://data.worldbank.org/).
ln_total_tax_rate	Total amount of taxes payable by businesses (except for labor taxes) after accounting for deductions and exemptions as a percentage of profit, 2009 (natural logarithm). Source: World Bank (http://data.worldbank.org/).
ln_trade_GDP	Natural logarithm of the sum of exports and imports of goods and

	services measured as a share of gross domestic product, 2009. Source: World Bank (http://data.worldbank.org/).
lnGDPcurrentUS$	Natural logarithm of the GDP at purchaser's prices (current US dollars), 2009. Source: World Bank (http://data.worldbank.org/).
lnGDPcurrentus_OECD	Interaction variable defined as: *lnGDPcurrentus* * *oecd*
max_tax_corp	Highest rate shown on the schedule of tax rates applied to the taxable income of corporations, 2009. Source: World Bank (http://data.worldbank.org/).
max_tax_indiv	Highest rate shown on the schedule of tax rates applied to the taxable income of individuals, 2009. Source: World Bank (http://data.worldbank.org/).
oecd	Dummy variable taking the value of 1 if the country is a member state of the OECD (July 2010) and 0 otherwise.
royalties_net_percGDP	Net payments (payments – receipts) between residents and nonresidents for the authorized use of intangible, nonproduced, nonfinancial assets and property rights (such as patents, copyrights, trademarks, industrial processes and franchises) and for the use, through licensing agreements, of produced originals of prototypes (such as films and manuscripts). Data in current U.S. dollars, 2009, as a percentage of the GDP. Source: World Bank (http://data.worldbank.org/).
royalties_pay_percGDP	Payments from residents to nonresidents for the authorized use of intangible, nonproduced, nonfinancial assets and property rights (such as patents, copyrights, trademarks, industrial processes and franchises) and for the use, through licensing agreements, of produced originals of prototypes (such as films and manuscripts). Data in current U.S. dollars, 2009, as a percentage of the GDP. Source: World Bank (http://data.worldbank.org/).
royalties_rec_percGDP	Royalty receipts from nonresidents for the authorized use of intangible, nonproduced, nonfinancial assets and property rights (such as patents, copyrights, trademarks, industrial processes and franchises) and for the use, through licensing agreements, of produced originals of prototypes (such as films and manuscripts). Data in current U.S. dollars, 2009, as a percentage of the GDP. Source: World Bank (http://data.worldbank.org/).
tax_treaties	Total number of tax treaties for the elimination of double taxation on income and capital in force (30/6/2010). Multilateral treaties (such as the Nordic Convention) are also counted as one treaty. Source: International Bureau of Fiscal Documentation (Database IBFD Tax Research Platform, http://www.ibfd.org).

Appendix 2. Summary statistics

Variable	*N*	*Mean*	*SD*	*Min*	*Max*
res_art	63	15.63	11.32	0.00	46.00
res_art5	63	2.76	3.06	0.00	11.00
res_art12	63	2.43	1.87	0.00	6.00
budget_contribution(%)	30	3.33	4.88	0.20	23.90
common_law	63	0.21	0.41	0.00	1.00
fdi_net_stock †	59	-4.13	25.20	-133.97	39.83
fdi_net_stock_2002_09 †	61	-19.89	139.67	-551.09	521.94
fdi_net_stock_1995_09 ‡	61	-18.25375	193.4647	-637.431	788.463
fdi_net_stock_1989_09 ‡	61	-22.50323	218.220	-715.284	859.244
fdi_net_stock_1979_09 ‡	61	-23.90621	229.147	-813.419	867.765
fdi_net_perc_GDP	59	-0.001	0.082	-0.549	0.098
fdi_net_perc_GDP_2002_09	61	0.006	0.071	-0.464	0.166
fdi_net_perc_GDP_1995_09	61	0.096	0.053	-0.325	0.137
fdi_net_perc_GDP_1989_09	61	0.009	0.046	-0.275	0.111
fdi_net_perc_GDP_1979_09	61	0.009	0.041	-0.249	0.078
ln_GDPcurrentUS$	62	26.15	1.69	22.89	30.28
roy_rec_percGDP	53	0.002	0.002	0.00	0.0116
roy_pay_percGDP	54	0.01	0.02	0.00	0.15
roy_net_percGDP	53	0.004	0.020	-0.007	0.146
max_tax_indiv	58	33.40	13.50	0.00	62.28
max_tax_corp	61	25.40	8.15	10.00	55.00
total_tax_rate	63	49.13	35.14	14.10	293.30
ln_total_tax_rate	63	3.81	0.41	2.71	5.68
tax_treaties	63	58.44	25.72	0.00	120.00
trade_GDP	58	84.69	48.18	22.62	305.57
ln_trade_GDP	58	4.32	0.51	3.16	5.73
oecd	63	0.51	0.50	0.00	1.00

† in million US$.
‡ in billion US$.

TABLE 4. Summary statistics.

Appendix 3. Bivariate correlations

Variable	*(1)*	*(2)*	*(3)*	*(4)*
(1) res_art_5	1.000	0.222	-0.537	0.229
(n)	63	59	63	59
(2) fdi_net_stock	0.222	1.000	-0.332	0.268
(n)	59	59	59	59
(3) oecd	-0.537	-0.332	1.000	-0.311
(n)	63	59	63	59
(4) fdi_net_percGDP	0.229	0.268	-0.311	1.000
(n)	59	59	59	59

TABLE 5. Bivariate correlations. Variables used in the regressions to test the influence of FDI on reservations to Art. 5 of the OECD Model.

Variable	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
(1) res_art_12	1.000	-0.680	-0.226	-0.150	-0.559
(n)	63	53	54	53	63
(2) roy_rec_percGDP	-0.680	1.000	0.338	0.217	0.542
(n)	53	53	53	53	53
(3) roy_pay_percGDP	-0.226	0.338	1.000	0.992	0.161
(n)	54	53	54	53	54
(4) roy_net_percGDP	-0.150	0.217	0.992	1.000	0.101
(n)	53	53	53	53	53
(5) oecd	-0.559	0.542	0.161	0.101	1.000
(n)	63	53	54	53	63

TABLE 6. Bivariate correlations. Variables used in the regressions to test the influence of royalty payments to reservations to Art. 12 of the OECD Model.

Variable	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
(1) res_art	1.000	0.251	-0.575	0.104	-0.085	-0.172	-0.284	-0.020	0.096	-0.383
(n)	63	30	63	63	62	58	63	61	63	58
(2) budget_contribution	0.251	1.000	.	0.325	0.784	-0.630	0.172	0.677	0.248	0.065
(n)	30	30	30	30	30	28	30	30	30	30
(3) oecd	-0.575	.	1.000	-0.047	0.440	0.084	0.454	0.059	-0.109	0.534
(n)	63	30	63	63	62	58	63	61	63	58
(4) common_law	0.104	0.325	-0.047	1.000	0.264	-0.054	0.010	0.319	-0.310	-0.019
(n)	62	30	62	62	62	58	62	60	62	57
(5) ln_GDPcurrentUS$	-0.085	0.784	0.440	0.264	1.000	-0.432	0.634	0.476	0.060	0.342
(n)	62	30	62	62	62	58	62	60	62	57
(6) ln_trade_GDP	-0.172	-0.630	0.084	-0.054	-0.432	1.000	0.085	-0.464	-0.429	-0.064
(n)	58	28	58	58	58	58	58	56	58	53
(7) tax_treaties	-0.284	0.172	0.454	0.010	0.634	0.085	1.000	0.072	-0.039	0.272
(n)	63	30	63	63	62	58	63	61	63	58
(8) max_tax_corp	-0.020	0.677	0.059	0.319	0.476	-0.464	0.072	1.000	0.226	0.203
(n)	61	30	61	61	60	56	61	61	61	58
(9) ln_total_tax_rate	0.096	0.248	-0.109	-0.310	0.060	-0.429	-0.039	0.226	1.000	0.222
(n)	63	30	63	63	62	58	63	61	63	58
(10) max_tax_indiv	-0.383	0.065	0.534	-0.019	0.342	-0.064	0.272	0.203	0.222	1.000
(n)	58	30	58	58	57	53	58	58	58	58

TABLE 7. Bivariate correlations. Variables used in the regressions to test hypotheses 3 to 8.