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DOES THE GENDER COMPOSITION OF THE BOARD OF DIRECTORS HAVE ANY EFFECT ON TAX AGGRESSIVENESS IN WESTERN COUNTRIES?

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ABSTRACT. Women constitute more than half of the population, but they are still underrepresented in areas such as company boardrooms. This study analyses whether having an equal gender composition in a company's board of directors would reduce tax aggressiveness. We use panel data from 2015 to 2019 taken from a sample of listed companies in the USA, the UK, Switzerland, Sweden, Spain, the Netherlands, Germany, and France. Women remain underrepresented in most of the countries in our sample, never exceeding one-third of board members. The results of the model are mixed. The gender composition of the board is not statistically significant in explaining tax aggressiveness except for in three countries: in the USA and the UK, an increase in women on the board produces an increase in tax aggressiveness, while in Switzerland, there is the opposite effect. We conclude that governments should promote policies for equality in the boardroom and a fairer tax system because, even if they are not clearly related, they are the basis for socio-economic development. Lastly, future research should include tests on non-listed companies and other variables on board diversity in the analysis.

JEL Classification: H26, H30, J16, K34, K38

Keywords: tax aggressiveness, tax avoidance, gender, board of directors, gender board composition, listed companies

Introduction

Women constitute more than half of the global population, and therefore, having a gender policy should support, ceteris paribus, the best allocation of human resources in an economy. In recent decades, social movements have succeeded in achieving equality for women in several areas. However, several sectors and jobs are still characterised by significant inequality, which many countries have been trying to reduce in recent years. This also applies to boards of directors, even though gender diversity, and board diversity in general, would allow companies to consider different points of view and make better decisions.

The last decade has witnessed a small revolution that has brought taxation and tax avoidance into the public debate at an international level. After numerous scandals such as the

Lux Leak, Panama Papers, and Paradise Papers, society has demanded that stricter rules be imposed in which all companies and individuals have to pay a fair amount of taxes. To meet citizens' expectations and address double non-taxation at the international level, the G20 gave a mandate to the Organisation for Economic Co-operation and Development (OECD) in 2011 to formulate taxation guidelines for all countries. In response, the OECD launched the Base Erosion and Profit Shifting (BEPS) project, involving a large number of countries and engaging in dialogue with the private sector to reduce aggressive tax planning. For tax planning we refer to tax schemes that use tax loopholes to reduce tax liability in a way that is not in the spirit of the law (European Commision, 2017; European Commision, 2012). While there is agreement that tax avoidance is something that governments should try to reduce to have a fairer tax system, the company's tax strategy does not seem to affect consumers' preferences; thus, tax avoidance does not necessarily damage companies' reputations, so the multinational companies do not have any customer pressure in reducing aggressive tax practices (Gallemore, Maydew, & Thornock, 2014).

Since some countries have been supporting an increase in the number of women on boards and simultaneously closing tax loopholes, we wonder whether gender equality on boards has an effect on reducing aggressive tax planning. Supporting gender diversity in the board of directors is not only about female quotas, but it is the basis of equality and human rights and represents the first step in introducing diversity in boards of directors.

Some studies have found a link between an increase of women on boards and a reduction of aggressive tax planning, thus arguing for the adoption of female quotas on boards (Francis, Hasan, Wu, & Ya, 2014; Lanis, Richardson, & Taylor, 2015). In their study, Francis et al. (2014) analyse the relationship between the gender of the chief financial officer (CFO) and the fiscal aggressiveness of a sample of listed U.S. companies of Standard & Poor's (S&P) 1500 from 1998 to 2007. They use three proxy variables for tax aggressiveness: the probability of tax sheltering, the expected unrecognised tax benefit, and the permanent discretionary differences in bookkeeping tax. In all three models, they find significantly lower tax aggressiveness levels in companies with a female CFO.

Lanis et al. (2015), using a sample of 416 U.S. companies of the S&P 500 for 2006-2008, found that increasing gender equality in the board reduces tax aggressiveness. In this case, the variables used for tax aggressiveness are the effective tax rate and the accounting tax gap.

Hoseini and Gerayli (2018) obtain a similar result for 97 companies listed on the Tehran Stock Exchange from 2011 to 2015. The dependent variables are the book-tax gap and the effective tax rate. Furthermore, they find a negative relationship between the presence of women on corporate boards and the level of corporate tax avoidance, especially in larger companies. Moreover, in repeating the model for each year separately, they find the coefficient of the independent variable, namely the presence of women, is negative correlated with tax avoidance for every year.

Another relevant study is Richardson (2016). Using panel data of listed Australian companies from 2006-2010, the study finds that the presence of female directors is related to lower tax aggressiveness after controlling for variables like the age of directors, financial background, and tax expertise.

Adams and Ferreira (Adams & Ferreira, 2009) analyse a sample of U.S.-listed companies for 1996–2003. They find that female directors have better attendance records than men and are more likely to join monitoring committees; however, on average, they conclude that gender diversity reduces firm performance.

Another study (Gulamhussen & Santa, 2015) focusing on banks and using a sample of 461 OECD companies in 2006 finds that female board directors positively influence the performance of these companies.

In the US, the PwC (2019) survey of directors of listed companies found that more than half of the women interviewed are against the introduction of a mandatory quota, and this percentage reaches 83% when considering all the directors interviewed. The same survey finds that, although almost half (49%) of the directors interviewed would replace some of their colleagues, turnover of board directors is low. Furthermore, interviews conducted by Creary, McDonnel, Ghai, and Scruggs (2019) reveal that directors usually fill a vacancy by choosing someone from their network, not considering the diversity component and thus postponing any chance for change a bit further. Thus, a company does not necessarily change the composition of the board of directors even when this is needed.

The table below shows the gender equality of the boards for selected countries. It also shows which countries have introduced mandatory quotas and the quotas' targets, deadlines, and enforcement. Furthermore, it also includes the gender board composition in 2010 and 2020 to show its evolution in the last eleven years.

Table 1. Gender quota percentage and regulation

Country	Bill passed	Mandatory quota or sanctions	Target	Deadline	% women BoD 2010	% women BoD 2020
France	2011	Yes	40%	2017	12.3%	45.1%
Norway	2003	Yes	40%	2008	38.9%	40.4%
Italy	2011	Yes	33%	2017	4.5%	38.4%
Sweden	No	No	-	-	26.4%	38.0%
Germany	2015	Yes	30%	2016	12.6%	36.3%
UK	No	No	-	-	13.3%	34.7%
Australia	No	No	-	-	26.0%*	34.0 %
Spain	2007	No	40%	2015	9.5%	29.3%
USA	No	No	-	-	20.3%*	28.2%
Switzerland	2020	Yes	30%	2026	17.5%*	26.1%
Japan	No	No	-	-	1.3%	10.7%

** The data refer to the percentage of women on the board in 2016.*

Sources*:*

- *Percentage of women on the board: the data for European Union countries, including Norway and the UK, are from the European Institute for Gender Equality* (EIGE, 2020)*); the data for Japan, Australia, the USA, and Switzerland are from MSCI* (2020)*, retrieved from the OECD database Employment: Female share of seats on boards of the largest publicly listed companies. The 2010 data for Japan is from Saito* (2017)
- *Quota regulation: National legislations of each country and Seierstad, Gabaldon, and Mensi-Klarbach's study* (2017)

The data presented in the table shows that only 4.5% of board directors in Italy in 2010 were women. In 2011, the Italian government adopted a mandatory quota of 33%, which was achieved in the following years: in 2020, 38.4% of directors were women. Unlike Italy, Spain passed soft legislation in 2007 with a target of 40%; however, companies did not meet this target. Instead, like Spain, Sweden implemented soft legislation but achieved a percentage of 38.0% in 2020.

None of the English-speaking countries, namely the UK, Australia, and the US, have adopted a mandatory quota, they opted instead for soft legislation. In the UK, a voluntary approach to gender equality has produced a steady annual increase in the share of women on boards of directors, reaching 34.7% in 2020 (UK, 2019) (Hampton-Alexander Review, 2019) (ILO Bureau, 2019). In Australia, a mandatory target was set for government agencies but not private companies. The US presents a unique case because, in 2018, the State of California introduced a mandatory gender quota (State of California, 2018). While the legislation does not

set a percentage target, it mandates that a minimum of one, two, or three women directors must be on boards composed of less than five, five, or more than five directors, respectively. Although California is the only state to have implemented a quota, other states could follow (Von Meyerinck et al. 2021).

To conclude, many countries are making progress in increasing the gender equality of the boards of directors. Moreover, to take advantage of all the benefits incurred by diversity in the board of directors, the board's procedures should be oriented towards an equal model. This means that, unlike the hierarchical system, a board system based on equality should create opportunities to ensure that all board members can equally present their views (Creary, McDonnel, Ghai, & Scruggs, 2019). At the moment, this is not always the case: for example, the aforementioned PwC survey (2019) shows that dissident voices are often not considered as a concrete alternative.

In the next section, we explain the methodology where we present our data, variables and model. Then we report the results of our model, and in the next section we compare them with previous studies and finally we present our conclusion.

1. Methodology

Data

For this research, we obtained financial and non-financial data of companies from EIKON software, a database provided by Refinitiv, which is a Thomson and Reuters company. The period covered ranges from 2015 to 2019, and the sample size varies for each of the following countries: the USA, the UK, Switzerland, Sweden, Spain, the Netherlands, Germany, and France. The sectors excluded are banking, insurance, and energy because they have a specific legislation.

Dependent variable

The dependent variable chosen should succeed in reporting the tax aggressiveness of a company. For example, a multinational company may reduce its taxes by increasing expenses and/or reducing sales with, for example, tax planning schemes using hybrid mismatches and transfer pricing. Considering this, we have chosen the ratio of taxes paid on turnover (TTS) as a proxy variable for tax aggressiveness. Using this ratio, we want to determine whether the gender of the directors can influence firms' strategies and, thus, the payment of taxes. Therefore, we only selected the TTS ratio with a value in the range of -10% to +10%.

Other authors have considered effective tax rates (ETRs) as a proxy variable for tax aggressiveness (Hanlon & Heitzman, 2010) (Lanis, Richardson, & Taylor, 2015) (Hoseini & Gerayli, 2018). However, we preferred not to use these because it would have limited the sample to cases where the earnings before tax (EBT) were zero or higher. This is because the ETRs result from dividing taxes by EBT, and thus a negative result could have an opposite interpretation.

Francis et al. (2014) use the probability of tax sheltering, the expected unrecognised tax benefit, and the permanent discretionary differences in bookkeeping tax. These proxy variables are estimations that contain accounting variables in their calculation. We prefer TTS to reduce the problem of endogeneity.

Independent variables

Our independent variable is gender diversity on the board of directors (WBOP), calculated as the percentage of women on the board of directors. We calculated this percentage for the end of each of the five fiscal years.

Control variables

We selected several control variables. While the first variable reports the percentage of women in executive positions, the others are financial ratios: the earnings before interest depreciation and amortization (EBITDA) margin, return on asset (ROA), return on equity (ROE), net income before sales tax, total income on total assets, total liabilities on equity, financial expenses on sales, and enterprise value on EBITDA.

Table 2. Description of the variables used in the model

Variables		
Dependent variable	**TTS**	Tax on turnover = Provision for income taxes[1] / Total Revenue
Independent Variable	**WBOP**	Board Gender Diversity, Percent = no. woman board / total no. board
Control Variable	**WEMP**	Percentage of executive manager women = no. women as an executive manager / total no. executive managers
	EBITDAm	EBITDA margin (%) = (EBITDA / Operating revenue) * 100
	ROA	ROA using Earnings Before Tax (EBT) (%) = (EBT / Total Assets) * 100
	IT	Net Income Before Tax / Total Turnover
	TA	Total Revenue / Total Asset
	ROE	ROE using Earnings Before Tax (EBT) (%) = (EBT / Shareholder funds) * 100
	RLE	Total Liability/Equity
	FT	Financial expenses / sales * 100
	EVE	Enterprise Value/EBITDA

Model

We worked with the panel data of listed companies for the period 2015-2019. Unlike cross-sectional data, panel data can consider more than one year and, unlike time series, can include more than one individual in the study. Thus, a panel dataset has multiple entities, each with repeated measures of the same variables during a selected period. Panel data can have individual (group) effects and time effects analysed jointly or individually with fixed-effect or random-effect models. The panel data allows us to correct model heterogeneity that remains constant over the period, although it cannot be measured.

We considered only the individual effect (one-way) for the model, because the time effect (two-way) was not significant. Then, we ran the fixed-effects and random-effects models, choosing the appropriate one in each country by applying the Hausman test. When using the random model, we also performed the Breush-Pagen test to check whether the ordinary least squares (OLS) was preferable to the random model.

[1] "Provision for income taxes" is the variable that the database EIKON by Refinitiv (Thomson and Reuters) indicates as "Tax Liability"

$$Fixed\ effect\ model: Y_{it} = \eta_i + \beta X_{it} + U_{it}$$
$$Random\ effect\ model: Y_{it} = + \beta X_{it} + v_{it}$$

Y is the independent variable; X is the independent and control variables, η is the individual-specific effect that is constant over time and unknown and *u* is the error term. In the fixed-effect model, the individual-specific effect, η, is correlated with the independent explanatory variable. Instead, in the random effect model, the individual-specific effect is uncorrelated with the explanatory variable, and it is considered together with the error term = v_{it} $(\eta_i + U_{it})$.

In the model, we introduce the WBOP with a lag because we believe that a change in the board will produce effects after at least one year. However, this also means that we lost one year of the period studied. As stated, we excluded all banking, insurance, and energy companies. For each country, we checked the corporate income tax rates and normalised the rates of the period to the one for 2019. Finally, we selected only companies with a TTS between -10% and +10%.

2. Results

2.1. Descriptive analysis

The table below reports the sample size, the mean, and the standard deviation of the descriptive analysis for the dependent variable (TTS), the independent variable (WBOP), and the control variables for each country.

Table 3. Descriptive analysis

Variable	United States of America			United Kingdom			Switzerland			Sweden		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
WBOP	393	0.23	0.13	580	0.27	0.1	208	0.2	0.1	162	0.36	0.1
WEMP	393	0.19	0.16	579	0.17	0.15	208	0.06	0.08	162	0.2	0.11
TTS	393	0.01	0.02	580	0.02	0.02	208	0.02	0.02	162	0.02	0.02
EBITDAm	393	0.11	0.09	580	0.22	0.15	208	0.2	0.14	162	0.22	0.18
ROA	393	0.08	0.13	580	0.09	0.1	208	0.08	0.07	162	0.09	0.08
IT	393	0.05	0.1	580	0.19	0.5	208	0.14	0.13	162	0.27	1.62
TA	393	1.84	1.29	580	0.96	0.72	208	0.74	0.57	162	0.81	0.53
RLE	393	0.41	14.2	580	3.52	40.7	208	1.63	14.5	162	1.76	6.78
ROE	393	0.12	1.21	580	0.1	2.4	208	0.24	0.5	162	0.31	1.48
FT	393	0.01	0.01	580	0.02	0.06	208	0.01	0.02	162	0.02	0.04
EVE	393	25.7	323	573	11.6	21.7	184	14.5	8.12	159	14.5	16.6

Variable	Spain			Netherlands			Germany			France		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
WBOP	104	0.22	0.1	102	0.25	0.13	250	0.29	0.09	280	0.41	0.08
WEMP	104	0.12	0.08	102	0.12	0.13	250	0.08	0.1	280	0.15	0.12
TTS	104	0.03	0.03	102	0.02	0.02	250	0.02	0.02	280	0.03	0.02
EBITDAm	104	0.29	0.23	102	0.13	0.45	250	0.16	0.15	280	0.2	0.14
ROA	104	0.06	0.05	102	0.06	0.07	250	0.07	0.07	280	0.06	0.04
IT	104	0.24	0.51	102	0.06	0.41	250	0.08	0.21	280	0.13	0.23
TA	104	0.56	0.33	102	0.75	0.53	250	0.91	0.61	280	0.65	0.36
RLE	104	2.9	2.37	102	2.23	9.82	250	2.93	7.26	280	2.1	1.69
ROE	104	0.19	0.16	102	0.2	0.23	250	0.19	0.24	280	0.15	0.13
FT	104	0.04	0.07	102	0.02	0.04	250	0.01	0.02	280	0.02	0.04
EVE	101	14.3	14	102	7.24	43.5	250	14	43.1	280	12.2	7.84

The figure below reports the average of the gender board diversity for each country between 2015 to 2019. In 2019, France was the country with, on average, the most women in company boardrooms (44.10%). Sweden has the second-most women in company boardrooms (37.39%); unlike France, it does not have a mandatory quota. Finally, in the lower part of the graph, Switzerland, the USA, and Spain have less than 30% of women on company boards.

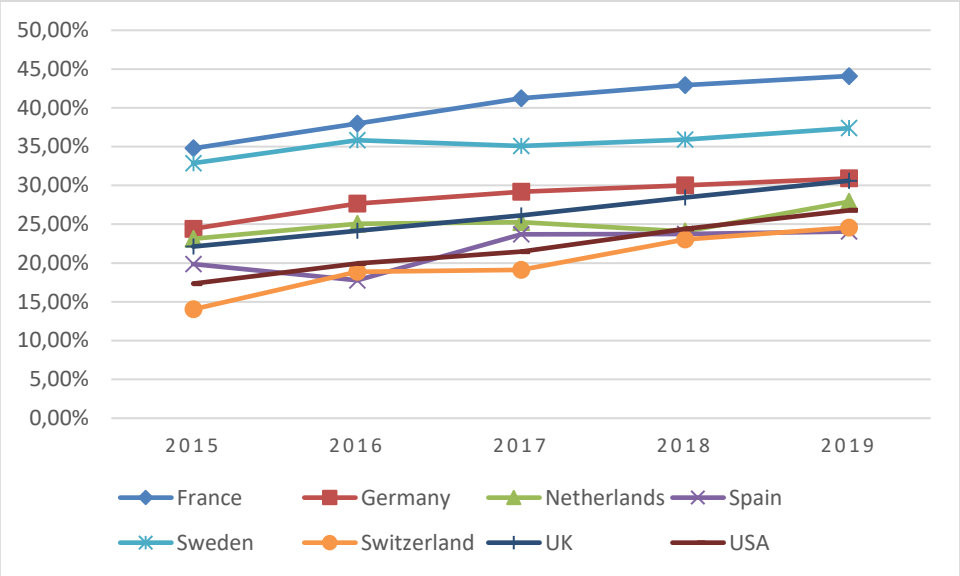

Figure 1. 2019 - Board gender diversity

Source: *own data*

The next figure shows the TTS for the period. Countries have a TTS between 1.50% and 2.50%, except for the US, which has a TTS equal to or less than 1% for the entire period.

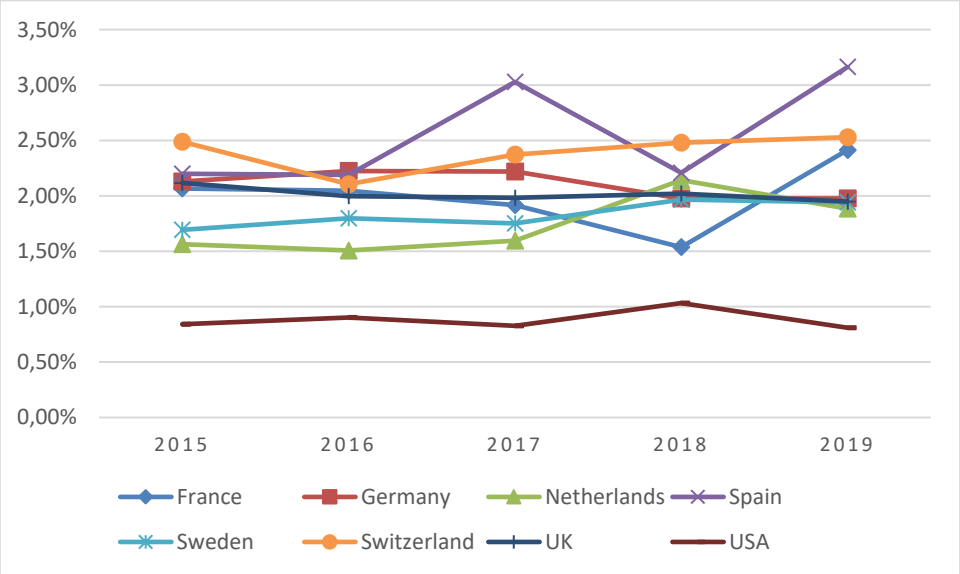

Figure 2. 2019 - Tax on turnover

Source: *own data*

2.2. Regression analysis

We ran a regression analysis to see whether the increase of women on the board of directors has some effect on the tax aggressiveness of a company. As the tables show, the group number refers to the number of companies in the sample, while the number of observations refers to the data as a whole. Furthermore, there are some differences between the sample sizes shown in the descriptive analysis due to the introduction of a lag in the independent variable. We tested all the models, using only the dependent and the independent variable, and the results show the same sign and significance level, proving that our results are robust. Only in the case of the US, the independent variable is significant after introducing the control variables.

Table 4. Models for selected countries: the USA, the UK, Switzerland, and Sweden.

	USA	UK	Switzerland	Sweden
	OLS	FE	FE	RE
Variables	**TTS**	**TTS**	**TTS**	**TTS**
WBOP_lag1	-0.0125	-0.0309	0.0257	0.0157
	(0.0058)**	(0.0113)***	(0.0127)**	(0.0154)
WEMP_lag1	0.0043	0.0184	-0.0303	-0.03
	(0.0052)	(0.0112)	(0.0175)*	(0.0152)**
EBITDAm	0.018	0.0141	0.046	-0.0309
	(0.0146)	(0.0257)	(0.0197)**	(0.0123)**
ROA	0.0378	0.0824	0.061	0.1426
	(0.0101)***	(0.0143)***	(0.0947)	(0.0247)***
IT	0.0658	-0.0042	0.0481	-0.0038
	(0.018)***	(0.0024)*	(0.0324)	(0.0011)***
TA	-0.0017	0.0067	0.0102	-0.0173
	(0.0006)***	(0.005)	(0.0109)	(0.0052)***
ROE	-0.0001	-0.0003	-0.0211	0.0125
	(0.0006)	(0.0005)	(0.0328)	(0.0074)*
RLE	0	0.0001	0.0043	-0.0031
	(0)	(0)*	(0.0041)	(0.0019)*
FT	-0.1761	-0.0164	-0.1711	0.1576
	(0.0575)***	(0.0495)	(0.141)	(0.2087)
EVE	0	-0.0001	-0.0002	-0.0001
	(0)	(0.0001)	(0.0002)	(0.0001)
cons	0.0128	0.0131	-0.0047	0.0365
	(0.0024)***	(0.0087)	(0.0126)	(0.0086)***
Number of groups		126	40	0
Number of obs	263	415	133	0
F (Model)	29.1	5.98	3.29	0
Adj R-squared	51.75%	45.07%	66.31%	0.00%
Significance at the 10%, 5%, and 1% levels is indicated by *, **, and *, respectively**				
Adj R-squared is calculated with a linear regression model of pool data				

Table 5. Models for selected countries: Spain, the Netherlands, Germany, and France.

	Spain	Netherlands	Germany	France
	FE	OLS	FE	FE
Variables	**TTS**	**TTS**	**TTS**	**TTS**
WBOP_lag1	-0.0478	0.0142	-0.0164	-0.0192
	(0.0352)	(0.0186)	(0.0175)	(0.0185)
WEMP_lag1	0.0733	0.0207	-0.0093	-0.001
	(0.0837)	(0.0177)	(0.0219)	(0.0264)
EBITDAm	0.1486	0.0692	-0.0755	0.1062
	(0.0904)	(0.0279)**	(0.039)*	(0.0599)*
ROA	0.4886	0.2644	0.1779	0.0612
	(0.2487)*	(0.0593)***	(0.0527)***	(0.1963)
IT	-0.0129	-0.1078	0.072	0.0019
	(0.0134)	(0.0354)***	(0.0376)*	(0.0552)
TA	-0.0386	-0.0094	-0.0019	-0.0035
	(0.0299)	(0.0041)**	(0.0061)	(0.0162)
ROE	-0.0156	0.0004	-0.0115	0.05
	(0.0641)	(0.0127)	(0.0076)	(0.0423)
RLE	0.0077	0.0003	-0.0003	-0.0029
	(0.0044)*	(0.0002)*	(0.0002)	(0.0027)
FT	-0.6382	-0.1989	-0.0644	-0.1606
	(0.1914)***	(0.1159)*	(0.2761)	(0.2841)
EVE	-0.0002	0.0003	0	-0.0003
	(0.0006)	(0.0001)***	(0.0001)	(0.0004)
cons	-0.0053	0.0006	0.029	0.0147
	(0.0323)	(0.0071)	(0.0099)***	(0.0196)
Number of groups	20		55	61
Number of obs	63	73	175	188
F (Model)	4.62	6.72	5.93	2.83
Adj R-squared	75.36%	44.27%	49.46%	59.38%
Significance at the 10%, 5%, and 1% levels is indicated by *, **, and *, respectively**				
Adj R-squared is calculated with a linear regression model of pool data				

As shown in the tables, we ran the same model for each country. In all cases, the F test results less than 0.05 which means that the simultaneous influence of predictor variables to the dependent variable is statistically significant. There are mixed results when comparing the countries. The independent variable, the percentage of women on the board, is statistically significant in explaining the tax aggressiveness in only three cases: the USA, the UK, and Switzerland. In the USA and the UK, the effect is negative. Thus, an increase in gender equality in the boardroom corresponds to a smaller ratio of TTS, or in other words, to a higher level of tax aggressiveness. In contrast, in Switzerland, the effect is positive. In the other countries, the variable is not significant and produces inconsistent results.

Checking for the control variables, the percentage of women in managerial positions is significant and negative in Sweden and Switzerland; thus, an increase of female managers in these countries results in a higher level of tax aggressiveness.

Only the most significant financial variables are considered. In most cases, the ROA is significant and positive. The total income over total assets (TA) is significant and negative in the USA, Sweden, and the Netherlands. The financial expenses on sales (FT) are significant and negative in Spain, the Netherlands, and the USA. The EBITDA over operating revenue (EBITDAm) is significant with a positive effect in Switzerland, the Netherlands, and France. Instead, it is significant but with a negative effect in Sweden and Germany. Finally, the net

income before tax over total turnover (IT) has significant but mixed results: it is positive in the USA and Germany and negative in the UK, Sweden, and the Netherlands.

3. Discussion and conclusion

As the results show, although the number of women on company boards increased during the studied period, women remain underrepresented in most of the countries in our sample, never exceeding one-third of board members. These results align with data published by EIGE (2020) and MSCI (2020), which shows that the percentage of women is low but slowly growing. Moreover, when we analyse the effect of women board of directors on fiscal aggressiveness, there are mixed results. Board gender equality does not appear to be statistically significant in explaining aggressive tax planning except for in the USA, the UK, and Switzerland. As stated, in the first two countries, an increase in women increases tax aggressiveness, while in Switzerland, having more women on the board reduces tax aggressiveness. The results are not in line with previous studies that have found that the presence of women on a company's board reduces the level of tax aggressiveness (Francis, Hasan, Wu, & Ya, 2014) (Lanis, Richardson, & Taylor, 2015) (Hoseini & Gerayli, 2018) (Richardson, Taylor, & Lanis, 2016). One of the differences between these studies and our analysis is that we use the tax on turnover as a proxy variable of tax aggressiveness. This reduces problems of endogeneity and consider all possible company income results as explained above.

The lack of a statistically significant effect of the gender equality of a board in explaining tax aggressiveness may be coherent with social changes and the tax policy of the selected countries. While the number of women on boards has increased over the years, tax aggressiveness may follow a different path. When considering tax aggressiveness, there are two opposing interests: some governments want to reduce tax avoidance following the OECD guidelines of the BEPS project, while companies are still pursuing ways to reduce their tax liability. The ongoing changes in the tax legislation that aim to produce fairer tax system are likely to only have effect later on. For example, the European Union passed two anti-tax avoidance directives, ATAD I (2016) and ATAD II (2017), but these directives were to be implemented in 2019 and 2022, respectively. Therefore, any effect of this legislation on tax aggressiveness will only be evident in the coming years.

In any case, the underrepresentation of women on boards remains a human rights issue as companies are not hiring people with the appropriate skills because of their gender. For this reason, countries should continue to support gender equality on boards.

This study has some limitations because of a lack of available data about the gender composition of boards and other complementary socio-economic variables. Due to this, we excluded countries such as Italy, Norway, Denmark, Finland, Belgium, and Austria from the initial sample. Moreover, in Spain, Switzerland, and Sweden, we only had data on 23, 42, and 39 companies, respectively, reducing the robustness of these results. Lack of data limits research on the gender composition of boards and its implications. In this regard, governments should promote more readily available information on gender board composition.

This study does have several strengths. To our knowledge, this is the first study that considers more than one country and a more recent period when analysing gender board composition and tax aggressiveness. By considering more than one country, we can test whether a higher presence of women on the board affects fiscal aggressiveness regardless of the country's socio-economic context. The examined period is recent, thus reducing the bias of recovery from the 2008 financial crisis and gender equality policies. The 2008 financial crisis, which began with the failure of Lehman Brothers, had a longer-lasting effect than previous crises, as reported in an IMF working paper (Chen, Mrkaic, & Nabar, 2019). Thus, the

performance of firms which survived the crisis was slow but positive, and so their taxes also increased. During the same period, many governments began paying attention to gender equality on the boards of directors. For example, in 2012, the European Commission proposed a directive on gender equality in board composition which suggested establishing a mandatory quota of 40% for listed companies to be achieved by 2020. Although the proposal did not pass because it did not receive the support of those countries that preferred to handle the problem with soft legislation, most countries took action to reduce gender inequality. Thus, just like taxation legislation, the gender composition of the board also improved during this period. Furthermore, studies conducted before and immediately after 2008 have another limitation: most companies with women on the board only had one, limiting the effect of women on business decisions (Adams & Ferreira, 2009) (Gulamhussen & Fonte Santa, 2015). We believe that our study demonstrates the relationship between gender board composition and fiscal aggressiveness better than other studies for these reasons.

Finally, we want to stress the role of governments in supporting greater gender equality on the board of directors and a fairer tax system. Equality in the boardroom, and more generally diversity, can provide companies with a better understanding of the context in which they operate. In addition, reducing tax avoidance would produce a fairer tax system. We recommend that countries promote both policies even if they are not clearly related because they are the basis for socio-economic development.

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