



The Impact of Internal Governance Mechanisms on Tax Risk in Developing Countries: An Empirical Analysis

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ABSTRACT

The purpose of this study investigates the impact of governance mechanisms, linked to the board of directors, on the tax risk of Tunisian listed companies. In order to empirically verify this relationship in the Tunisian context, we conducted a logistic regression with 8 banks listed on the Tunisian Stock Exchange during the period of 2008-2018. The overall results show that all the independent variables have a positive and non-significant impact on the probability of the presence of tax risk (with the exception of the dual management variable). Indeed, the variables size of the board of directors, the independence of its members and gender diversity have a positive and statistically insignificant impact on the probability of the presence of tax risk in Tunisian listed companies. On the other hand, the direction duality variable registers a positive and statistically significant correlation with the variable to be explained.

Keywords: Tax Risk, Logistic Regression, Conventional Banks, Board of Directors, Corporate Governance

JEL Classifications: M410

1. INTRODUCTION

Since the proliferation of corporate financial scandals over the past decade, the study of tax aggressiveness has been the subject of much intense reflection on the part of researchers and regulators. Indeed, the Canada Revenue Agency (2008) proclaimed after investigations that a very significant amount of corporate tax escapes the state as a result of aggressive tax planning practices.

According to Desai and Dharmapala (2006), managers attach great importance to achieving their objectives following the deployment of tax-aggressive activities. Recently, Scholes et al. (2005) report that fiscal aggressiveness does not take into account the potential non-fiscal costs that may accompany this new philosophy and in particular those arising from agency problems.

Moreover, management actions aimed at reducing tax revenue through the implementation of radical tax activities have become

increasingly common in all businesses around the world. Ranis and Richardson (2011) and Sara Fernández et al. (2019) found that taxation encourages managers to make many decisions to improve their company's performance.

So, corporate governance should frame various actors and according to planning procedures. It must have management activities with a global perspective. But the question of its performance has always been the subject of many controversies in time and space. In this point of view, some studies (Desai and Dharmapala, 2006; Hanlon and Slimrod, 2009; Chen et al. 2010; Ranis and Richardson, 2011; Maali et al. (2019) and Sobhy Abdel Megeid and Abd-Elmageed, 2020) demonstrated that certain governance mechanisms have a negative impact on fiscal aggressiveness.

Tax practices are not unique to developed countries and also exist in developing countries. In the Anglo-Saxon context, research studying the relationship between fiscal radicalism and certain

types of governance mechanisms has found contradictory results (Francis et al. 2014; Winasis and Yuyetta, 2017; Limbago and Sulistian, 2019; Rukti Pertiwi and Prihandini, 2021).

Likewise, the Tunisian context has different characteristics from those of Anglo-Saxon. Tunisia is one of the countries with a high debt ratio on the capital market (87.6% in 2020 and 91.2% in 2021, World bank April 2021), concentration of equity, domination of family businesses and tax incentives to encourage investment, while the Anglo-Saxon is characterized by a fair market and a decentralized structure (Ben Amar and Abaoub, 2010).

Then, the case of Tunisia constitutes an interesting field of investigation to study the relationship between governance mechanisms and taxation. More specifically, our study aims to analyze the impact of governance mechanisms on the taxation of companies listed on the Tunisian Stock Exchange.

In this regard, some researchers have pointed out that tax risk management is an integral part of the corporate governance system and conditions its effectiveness (Erle, 2008; Wunder, 2009; Naban and Sarvana Kumar, 2009; Bauer, 2016). Indeed, according to Erle (2008), the objective of the board of directors is to establish a process for managing tax risks and to find an appropriate balance between risk and opportunity.

Rossignol (2010) adds that when the tax risk management strategy lacks transparency, directors are increasingly sensitive to reputational risks. Therefore, the board of directors must ensure that an internal environment is created for the company to properly handle all tax matters in accordance with the tax strategy. That's why our research falls within this framework, emphasizing the impact of the characteristics of the board of directors on the tax risk in the Tunisian context.

The rest of the paper is structured as follows: In Section 2, the literature is discussed based on the hypotheses constructed. Section 3 outlines the method of data collection and variable measurement. As for the empirical results, the discussions of our findings and their implications are presented in Sections 4 and 5. Finally, Section 6 concludes the paper, presents the limitations and provides suggestions for future research.

2. THEORETICAL BACKGROUND AND RESEARCH HYPOTHESIS

According to agency theory, tax risk can create a governance problem that can cause conflicts of interest between stakeholders and requires the establishment of control mechanisms to manage it (Desai and Dharmapala, 2006; Desai and Dharmapala, 2008; Schön, 2008; Hanlon and Heitzman, 2010; Armstrong et al., 2015; Choi and Park, 2022). The board of directors, as an internal governance mechanism, can play an important role to get rid of the different conflicts of interest (Samuel Baixauli-Soler and Sanchez-Marin, 2014).

2.1. The Impact of Board Size on Tax Risk

In the wider corporate governance literature, the size of the board of directors can influence the level of tax aggressiveness. Jensen

(1993) argues that when boards are small they perform a better control function, but when they are large they are more likely to function as a check on management. Similarly, Beasley (1996) finds that the possibility of accounting and tax fraud increases with the size of the board of directors. Furthermore, Minnick and Noga (2010) showed that a small board enhanced good tax management, while a large board was found to be ineffective due to the difficulty of developing an active tax policy. Thus, Maali et al. (2019) and Sobhy Abdel Megeid and Abd-Elmageed (2020) found a negative correlation between board size and tax risk. Concerning the works of Bosun and Josiah (2019), they found that there is no significant relationship between board size and tax aggressiveness. Hence, we propose our first hypothesis as follows:

Hypothesis 1 (H1). The probability of the presence of corporate tax risk decreases with the size of the board of directors.

2.2. The Impact of Board Independence on Tax Risk

According to resource dependence theory, independent directors play an important role between the management of the company and its shareholders in making strategic decisions to comply with current regulations, including tax policies (Maali et al., 2019). Several studies have shown that the independence of directors on the board reduces tax risk (Lanis and Richardson, 2011; Lanis and Richardson, 2012; Armstrong et al., 2012; Jaradat, 2015; Gomes, 2016; Maali et al., 2019) and others have found a positive and significant association (Ngadiman and Puspitasari, 2017; Alfina and Wijayanti, 2018). We suggest the following hypothesis:

Hypothesis 2 (H2). The probability of the presence of corporate tax risk decreases with the independence of the board of directors.

2.3. The Impact of the Management Duality on Tax Risk

Duality means that the same person is appointed to both the positions of CEO and Chairman of the board of directors during the same period. According to agency theory, the separation of the roles of chairman of the board and chief executive officer is preferable in order to avoid the concentration of power and to provide a balanced control system (Jensen, 1993).

Several previous scholars have empirically tested the relationship between management duality and tax risk. Indeed, Maali et al. (2019) and Sobhy Abdel Megeid and Abd-Elmageed (2020) found a positive correlation between duality and tax risk. But other authors found a negative association between the two variables, namely, Minnick and Noga (2010). Thus, we assume that:

Hypothesis 3 (H3). The probability of the presence of corporate tax risk increases with the management duality.

2.4. The Impact of Gender Diversity on Tax Risk

Adams and Ferreira (2009) suggest that the high percentage of women who participated in meetings can exert intensive control over the actions of managers and make the best decisions and choice that have an impact on firm value (Anwar et al., 2018).

Some research on the influence of corporate governance on fiscal risk produce a mixture of results: positive, negative and no effect. On the one hand, in the Tunisian context, Aliani et al. (2011) found that there is a negative effect between gender diversity on the board of directors and tax optimization. On the other hand, Francis et al. (2014) and Winasis and Yuyetta (2017) stating that the presence of women in the board of directors affect positively the tax risk. Nevertheless, these results are different from others studies that concluding that gender diversity has significant relationship with fiscal aggressiveness (Zemzem and Ftouhi, 2013) or has no effect on the relationship between tax aggressiveness (Limbago and Sulistian, 2019; Rukti Pertiwi and Prihandini, 2021). Therefore, the assumption will be formulated as follows:

Hypothesis 4 (H4). The probability of the presence of corporate tax risk decreases with the gender diversity on the board of directors.

3. RESEARCH DESIGN

3.1. Sample Selection and Data Collection

Our objective is to analyze the factors that could explain the fiscal risk of Tunisian conventional banks using the method of estimating a logistic regression.

The selected banking sample is made up of 8 conventional banks observed over a period spanning 2008-2018. The distribution of banks is as follows:

- 3 public banks (BNA, STB and BH);
- 2 private banks with majority foreign capital (ATB, Attijari Bank);
- 3 private banks with majority national capital (BT, AB and BIAT).

3.2. Variables

To analyze the impact of the mechanism of corporate governance on the risk tax, the measures of variables are defined below.

3.2.1. Dependent Variable: Tax Risk (TRISK)

Tax risk is measured using a dichotomous variable (Hanlon et al., 2008; Lanis and Richardson, 2011). This variable is equal to 1, if the company recorded a tax provision or disclosed information on the tax risk in the notes to the financial statements or if the general report of the auditor contains information on this risk and 0 otherwise.

3.2.2. Independent Variables

We focus on the tax risk determinants of conventional banks using a set of factors specific to internal governance mechanisms, namely, the size of the board of directors, the independence of the members of the board of directors, the duality and gender diversity. The choice of these variables is motivated by their use in previous studies.

3.2.2.1. The size of the board of directors (BOZ)

The Board size is measured by the total number of bank board members. This measure has been used by several authors, Sun et al. (2012), Hunziker (2013), Al-Janadi et al. (2013) and Akbas et al. (2016).

3.2.2.2. The independence of the members of the board of directors (INDEP)

The percentage of independant directors is measured by the ratio between the number of independant directors and the total number of directors. This measure is employed by several authors (Deslandes and Landry, 2011; Lanis and Richardson, 2011 and Armstrong et al., 2012 and Baharudin and Marimuthu, 2019).

3.2.2.3. The duality of management (DUAL)

The Duality management is measured by a dichotomous variable. If the CEO is himself the chairman of the board, the value is 1, otherwise 0. This measure has been used in many studies, including Minnick and Noga (2010) and Ammari et al. (2014).

3.2.2.4. The gender diversity (DIV)

This variable is measured by the number of women on the board of directors out of the total number of directors (Raharjanti, 2019).

3.2.3. Control Variables

As discussed in the literature review, it is essential to include a set of control variables in our analysis, which allows us to control for other specific effects on tax risk, such as bank size, bank age, the debt ratio and return on assets (Table 1).

3.2.3.1. The size of the bank (BS)

This variable is measured by the natural logarithm of the book value of total assets at the end of the financial year (Desai and Dharmapala, 2006; Lanis and Richardson, 2012; Rego and Wilson, 2012). The logarithm transformation avoids the scaling problem. According to the literature, there is a positive correlation between the size of the bank and the effective tax rate (Maâli et al., 2019).

3.2.3.2. The age of the bank (BA)

The age of the bank is another factor that can seriously affect tax risk. This variable is measured by the difference between the year of observation and the date of creation (Brown et al., 2006; Ben Cheikh and Zarai, 2008).

3.2.3.3. The debt ratio (DEBT)

This variable is measured by the ratio between total debts and total assets (Ben Cheikh and Zarai, 2008). Taylor and Richardson (2014) found an association with aggressive tax firms. Note that debt can prove to be a stimulus for managers by deducting interest to reduce their tax burden.

3.2.3.4. The return on assets (ROA)

The company's return on assets (ROA) is defined as the ratio between net income and total assets. Companies are interested in tax optimization in order to improve their performance (Jamei, 2017). This variable is used to control performance and highlight the specific effect of tax optimization (Dyreg et al., 2008; Minnick and Noga, 2010; Lisowsky et al., 2012). Maâli et al. (2019) showed that tax aggressiveness is positively associated with performance.

3.3. Regression Model

In order to test the relationship between tax risk and governance variables, we opt for the logistic regression method, which allows us to identify the determinants of tax risk. The research model

Table 1: Description of variables

Variables	Measurement	Source	Expected sign
Dependent variable: Tax risk (TRISK)	This variable is equal to 1 if the company has made a provision for tax or has disclosed information on the tax risk or if the auditor's report contains information on this risk and 0 otherwise.	Our calculations from the annual reports.	
Independent variable			
The size of the board of directors (BOS)	The total number of bank board members.	Our calculations from the annual reports.	-
The Independence of the members of the board of directors (INDEP)	% of independent directors on the board	Our calculations from the annual reports.	-
The duality of management (DUAL)	If the CEO is also chairman of the board, 1 otherwise 0.	Our calculations from the annual reports.	+
The gender diversity (DIV)	The number of women on the board of directors out of the total number of directors.	Our calculations from the annual reports.	-
Control variables			
The bank size (BS)	The natural log of the book value of the total asset.	Our calculations from the annual reports.	+
The debt ratio (DEBT)	Total Liabilities/Total Assets.	Our calculations from the annual reports.	±
The age of the bank (BA)	The difference between the year of observation and the date of creation.	Our calculations from the annual reports.	+
The return on assets (ROA)	The ratio of net income to total assets.	Our calculations from the annual reports.	+

retained is similar with the advanced concepts on the determinants of tax risk and as follows:

$$TRISK = f(BOS, INDEP, DUAL, GEND, BS, DEBT, BA, ROA)$$

Our research stipulates that the variable to be explained (fiscal risk) is a function of the size of the board of directors (BOS), the independence of its members (INDEP), the duality of management (DUAL), the gender diversity (GEND), the bank size (BS), the return on assets (ROA), the debt ratio (DEBT) and the bank age (BA). Therefore, our empirical investigation model is as follows:

$$TRISK_t = \beta_0 + \beta_1 BOS_t + \beta_2 INDEP_t + \beta_3 DUAL_t + \beta_4 GEND_t + \beta_5 BS_t + \beta_6 BA_t + \beta_7 DEBT_t + \beta_8 ROA_t + \varepsilon_t$$

Since the dependent variable is binary, we will use the estimation of a logistic regression.

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

Table 2 reports descriptive statistics of the main variables used in this study. Descriptive statistics make it possible to become familiar with the different variables. The following table gives the different statistics of the variables of our model as well as the tests of asymmetry (Skewness), kurtosis and normality (Jarque-Bera).

From this table, we note that only the size of the bank (BS) respects the normality condition since the probability associated with the Jarque-Bera statistic is largely sufficient to accept the null hypothesis of normality.

The tax risk (TRISK) is on average in the region of acceptance of this phenomenon among Tunisian conventional banks. Indeed, the

average of the TRISK variable is greater than 0.5 (intermediate region). This position reflects a rather unhealthy situation in certain banking activities.

Regarding the «INDEP» variable, we find that this independence is rare in the Tunisian banking context. Indeed, the general rate of independence does not exceed 8.7% on average.

Concerning the «BOS» variable, we see that the number of board members in the entire sample ranges from 6 to 12. We also found that the average board size of most sample companies is almost 11.

In addition, the share of female representation on boards of directors remains too limited and does not exceed 7.1% on average. This shows that the appointment of more women on the board of directors does not encourage listed Tunisian companies.

4.2. Correlation Matrix

Table 3 presents Pearson correlations among the variables used in our model. Before interpreting the results of the estimation, it is interesting to study the problem of multicollinearity between explanatory variables. According to Pearson's test, there is a serious multicollinearity problem if the correlation coefficient is greater than 0.6 for each pair of variables.

The study of the correlation matrix makes it possible to detect the existence or not of a problem of multi-collinearity. From this table, we notice that the tax risk is positively and significantly correlated with INDEP, DUAL and BA. Indeed, the probabilities associated with the correlation coefficients of these variables with the TRISK variable are all <5%. However, the other variables show no correlative value relationship with the tax risk indicator (TRISK). These variables, qualified as important by the financial literature, failed to verify such hypotheses according to the close correlation analysis.

Table 2: Descriptive statistics

	TRISK	BOS	INDEP	DUAL	GEND	BS	BA	DEPT	ROA
Mean	0,750	10,955	0,087	0,409	0,071	15,623	3,838	0,668	1,023
Median	1	11	0	0	0,000	15,638	3,818	0,472	1,116
Maximum	1	12	0,33	1	0,270	16,577	4,898	4,072	2,616
Minimum	0	6	0	0	0,000	14,691	2,944	-4,560	-2,952
SD	0,435	1,364	0,123	0,494	0,084	0,381	0,480	0,919	0,773
Skewness	-1,155	-1,394	0,842	0,370	0,715	-0,122	0,741	-1,316	-1,777
Kurtosis	2,333	4,384	2,024	1,137	2,181	2,772	3,346	15,605	10,725
Jarque-Bera	21,185	35,527	13,889	14,735	9,961	0,409	8,487	607,967	265,144
Probability	0,000	0,000	0,001	0,001	0,007	0,815	0,014	0,000	0,000

Source: Eviews data processing

Table 3: Correlation matrix

Variables	TRISK	BOS	INDEP	DUAL	GEND	BS	BA	DEPT	ROA
TRISK	1,000								
BOS	-0,135 (0,208)	1,000							
INDEP	0,325** (0,002)	0,425** (0,000)	1,000						
DUAL	0,374** (0,000)	-0,126 (0,244)	0,325 (0,002)	1,000					
DIV	0,131 (0,225)	0,080 (0,459)	0,195 (0,069)	-0,103 (0,340)	1,000				
BS	0,167 (0,119)	0,214* (0,045)	0,409 (0,000)	-0,209 (0,050)	0,109 (0,314)	1,000			
BA	0,271* (0,011)	-0,579** (0,000)	0,097 (0,369)	0,380 (0,000)	0,225 (0,035)	-0,183 (0,087)	1,000		
DEPT	-0,170 (0,112)	0,263* (0,013)	-0,004 (0,967)	0,072 (0,505)	-0,071 (0,509)	0,041 (0,705)	-0,329 (0,002)	1,000	
ROA	-0,008 (0,941)	-0,530** (0,000)	-0,448 (0,000)	-0,174 (0,104)	0,016 (0,886)	-0,250 (0,019)	0,407 (0,000)	-0,139 (0,195)	1,000

Source: Eviews data processing

We also notice that all correlation coefficients in conventional banks are below 0.6. This indicates that there is a presumption of absence of the multi-collinearity problem.

Therefore, to be complete in our study, we must move on to the multivariate regression study. Assuming our relationship to be linear, we used logistic regression since our dependent variable TRISK is binary or dichotomous.

4.3. Regression-Analyses

Logistic regression proposes to test a regression model whose dependent variable is dichotomous (coded 0-1) and whose independent variables can be continuous or categorical.

Binomial logistic regression, as in our case, is very similar to linear regression. The weight of each independent variable is represented by a regression coefficient and it is possible to calculate the effect size of the model with an index similar to the coefficient of determination R^2 .

A logistic regression model also makes it possible to predict the probability that an event will happen (value of 1) or not (value of 0) from the optimization of the regression coefficients. This result always varies between 0 and 1. When the predicted value is greater than 0.5, the event is likely to occur, while when this value is <0.5 , it is not.

The regression model is as follows:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \dots + \beta_k X_{kt} + \varepsilon_t$$

The general null hypothesis is that the combination of the independent variables (the model) fails to explain the presence/absence of the dependent variable better than a model without a predictor. As was the case for the multiple regression, the confirmation of this null hypothesis marks the end of the interpretation of the model. When this null hypothesis is rejected, this means that there is at least one predictor of the model which is significantly associated with the dependent variable. It is then necessary to interpret the values of the coefficients of the model $(\beta_1, \beta_2, \dots, \beta_k)$ and to determine which one or which ones are significant.

For logistic regression, it's the same thing, but adding the logarithmic transformation.

$$P(Y) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \dots + \beta_k X_{kt})}}$$

$P(Y)$: Is the probability that Y arrival is the base of the natural logarithms.

The coefficients β represent the linear combination of the predictor and the constant. However, we must remember that even if the

formula is similar, we cannot apply a multiple regression when the Y is dichotomous, because we do not respect the premise of a linear relationship. The logarithmic transformation allows the equation to take on a linear form. The result obtained from a logistic regression will always lie between 0 and 1. If the value is close to 0, the probability of the event occurring is low, while if the value is close to 1, the probability is high.

The line of least squares of the linear regression is constructed from the coefficients which minimize the squared distance between the points (the observed values) and the line of regression. The choice of the coefficients of the logistic regression is rather based on obtaining the predicted values of Y located as close as possible to the observed values. These coefficients constitute the parameters for estimating the maximum probability (maximum-likelihood) and measure the change in the probability ratio (odds ratio).

5. DISCUSSION OF FINDINGS

The results presented and discussed in this study stem from the implementation of the theoretical choices made throughout the process of our research. Thus, their validity proceeds from the coherence of the general concept of the research defined to answer the problem of the determinants of the tax risk in the Tunisian conventional banks.

In this paragraph, we will try to apply the logistic regression method to our model. Note that our model takes the following form:

$$TRISK_t = \beta_0 + \beta_1 BOS_t + \beta_2 INDEP_t + \beta_3 DUAL_t + \beta_4 DIV_t + \beta_5 BS_t + \beta_6 BA_t + \beta_7 DEPT_t + \beta_8 ROA_t + \varepsilon_t$$

The logistic model seeks the degree of interest of the explanatory variables in the prediction of the dependent variable. Given the differences in the theoretical propositions, we will assume that all the explanatory variables are variables of interest. This assumption allows us to estimate the base model without any exclusion. In Table 4, we present the results of estimating Model.

Performing the logistic regression allowed us to decipher several results (Table 4). We note that the size of the board of directors has a positive and statistically insignificant impact on the tax risk of conventional banks. So our hypothesis 1 is rejected. This result contradicts the work of Minnick and Noga (2010) and that of Lanis and Richardson (2011). However, our results are consistent with those of Aliani et al. (2011) in the French context and Aliani and Zarai (2012) in the American context. We expect that a smaller board can increase decision-making and regulatory compliance, thereby reducing tax incentives.

For the «independence of the board» variable, the result found shows that the variable relating to the independence of the members of the board of directors has a positive and non-significant influence on the probability of the presence of tax risk. Hence, the non-validation of the second hypothesis. These results are not in agreement with research carried out by Beasley (1996),

Table 4: Regression Results

Variable	Coefficient	SE	z-Statistic	Prob.
BOS	0.198509	0.413503	0.480066	0.6312
INDEP	8.042708	5.552017	1.448610	0.1474
DUAL	4.805442	1.627937	2.951859	0.0032
DIV	3.512874	4.266104	0.823438	0.4103
BS	1.873589	1.153114	1.624808	0.1042
BA	0.663087	1.321446	0.501789	0.6158
DEPT	-1.951605	0.754860	-2.585387	0.0097
ROA	-0.312250	0.645832	-0.483484	0.6288
C	-32.51804	21.18428	-1.535008	0.1248
McFadden	0.380206	Mean dependent var		0.750000
R-squared				
S.D. dependent var	0.435494	S.E. of regression		0.358253
Akaike info criterion	0.901610	Sum squared resid		10.13926
Schwarz criterion	1.154974	Log likelihood		-30.67082
Hannan-Quinn criter.	1.003684	Deviance		61.34165
Restr. Deviance	98.97099	Restr. log likelihood		-49.48549
LR statistic	37.62934	Avg. log likelihood		-0.348532
Prob (LR statistic)	0.000009			
Obs with Dep=0	22	Total obs		88
Obs with Dep=1	66			

Source: Eviews data processing

Klein (2002), Ahmed and Duellman (2007) and Lajili (2007) who proved respectively that the existence of a more independent board of directors means a disclosure risk management, reducing profit management, increasing accounting robustness and reducing the possibility of tax and accounting fraud.

The findings also verify hypothese 3, showing that the duality of management is likely to be a significant determinant of tax risk. This result is confirmed by (Maali et al., 2019) who found a positive correlation between board duality and tax risk.

With regard to the «gender diversity» variable, its impact is positive and not significant, which means that the higher the proportion of women, the higher the effective tax rate. Thus, hypothesis 4 is rejected. We can deduce that the presence of women on the board of directors makes it possible to increase the tax aggressiveness of Tunisian listed companies. This finding agrees with that of Kastlunger et al. (2010) and Lanis et al. (2017) who believe that female board members do not participate in tax planning activities. They attribute more moral values to female directors than to male directors, indicating that men have a better attitude towards the decision-making processes that influence the adoption of fiscal strategies.

A set of control variables must be included in our analysis to allow us to control for other specific effects on the tax aggressiveness of listed companies, such as bank size, bank age, debt ratio and return on assets.

For «the size of the bank», there is a positive and non-significant correlation between the size of the bank and the probability of the presence of tax risk. Therefore, it seems that the size of the bank does not significantly affect the tax risk, this is confirmed by the empirical work of Goddard et al.(2004).

Regarding the «age of the bank», this variable has a positive and statistically insignificant effect on the tax risk of Tunisian conventional banks.

Concerning the «debt ratio» variable, the increase in the debt ratio reduces the tax risk; given that in a situation of indebtedness and suffering from financing, the legal procedures offer privileges to these companies so that they overcome this situation by minimizing the tax rates. This result is consistent with the findings of Taylor and Richardson (2014) who found a negative association with aggressive tax firms. Note that debt can prove to be a stimulus for managers by deducting interest to reduce their tax burden.

Finally, for the «return on assets» variable, this variable has a negative and insignificant effect on the probability of the presence of tax risk. This outcome is consistent with previous studies carried out by Prasista and Setiawan (2016). Their results are explained by the fact that companies with low profitability have a high probability of being taxed, in other words, companies with low profitability will choose to keep their financial and internal assets instead of paying taxes, which makes the company more aggressive in taxation.

6. CONCLUSIONS AND MANAGERIAL IMPLICATIONS

The goal of this study is to investigate the impact of governance mechanisms, linked to the board of directors, on the tax risk of Tunisian listed companies. In order to empirically verify this relationship in the Tunisian context, we conducted a logistic regression with 8 banks listed on the Tunisian Stock Exchange during the period 2008-2018.

The overall results show that all the independent variables have a positive and non-significant impact on the probability of the presence of tax risk (with the exception of the dual management variable). Indeed, the variables size of the board of directors, the independence of its members and gender diversity have a positive and statistically insignificant impact on the probability of the presence of tax risk in Tunisian listed companies. On the other hand, the direction duality variable registers a positive and statistically significant correlation with the variable to be explained (Kiesewetter and Manthey, 2017).

These results show that the tax aggressiveness of Tunisian listed companies increases with the size of the board of directors, the independence of its members, the presence of women on the board of directors and the duality of management. The non-confirmation of the majority of our basic assumptions can be explained on the one hand by means of the measurements of the variable to be explained, which is a qualitative variable, and requires more fiscal transparency and reliability of the financial information disclosed at the level financial statements or at the level of the auditors' report. This limit can be solved by a field survey at the level of the companies to be studied for the research of other new measures of tax risk.

Finally and concerning the control variables, the size and the age of the bank have a positive and insignificant impact on the tax risk. On the other hand, the debt ratio and the financial performance play a negative and statistically significant and insignificant role, respectively, on the tax risk. This proves that tax aggressiveness increases with size and age and decreases with indebtedness and profitability. In other words, there are differences in the tax management for firms of different size, different age, different indebtedness and different profitability. However, we cannot generalize our results to all kind of firms because of the small sample size in a specific Tunisian context.

Since tax revenues in Tunisia represent more than 80% of the State budget, the financial authorities must encourage Tunisian companies to comply with the regulations in force and avoid fraud and tax evasion, by creating tax advantages and financial.

For future study, others corporate governance mechanisms can be added to our model, such as, external audit and ownership structure and datasets from different developing countries can be used to enhance generalizability and mitigate the divergence of our results from previous literature.

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