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AUTHORS

Riadh Garfatta 

Imen Zorgati 

Elmoez Zaabi 

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Riadh Garfatta, Ph.D., Assistant
Professor, Faculty of Economic Sciences
and Management of Sousse (Tunisia),
Finance & Accounting Department,
University of Sousse, Tunisia.
(Corresponding authors)

Imen Zorgati, Ph.D., Faculty of
Economic Sciences and Management of
Sousse (Tunisia), Quantitative Methods
Department, University of Sousse,
Tunisia.

Elmoez Zaabi, Ph.D., Assistant
Professor, Arab East Colleges, Riyadh-
KSA, Management Department, Arab
East Colleges, Saudi Arabia.



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Riadh Garfatta (Tunisia), Imen Zorgati (Tunisia), Elmoez Zaabi (Saudi Arabia)

DO TUNISIAN FIRMS MANAGE THEIR EARNINGS AROUND THE CORPORATE TAX RATE CUT?

Abstract

Earnings management (EM, hereafter), which affects the quality of corporate financial information, continues to receive increased attention from practitioners and legislators. The paper deals with this topic and attempts to investigate the EM practices around the tax rate cut following the Tunisian tax reform of 2021. Evidence of EM is examined by focusing on both accounting and real EM. From a sample of 61 Tunisian public offering companies, observed from July 1, 2015 to June 30, 2021, the results estimated from the system GMM model argue that this tax rate reduction constitutes a real incentive to shift income from the period of higher tax rate (2020) towards the period of lower tax rate (2021) achieving significant savings for corporations. Furthermore, the results show that Tunisian firms have both accounting and real EM downward in the second half of 2020, and that the former is sharper. For the first half of 2021, the results show a joint use of accruals management and real management upwards, and that the latter is broader. These findings may be useful to tax policy-makers in the application of tax rules put in place to counter aggressive tax evasion. In addition, external auditors and tax auditors should consider the period around the change in the corporation tax rate to be more suspect.

Keywords

tax reform, accounting earnings management, real earnings management, system GMM, Tunisia

JEL Classification

C23, G30, H26, M41, M48

INTRODUCTION

Tunisia has very recently experienced a major reform of corporate tax. As per 2021 Finance law, the general corporate tax rate of 25 percent has been reduced to 15 percent applicable for income realized as from January 1, 2021. However, this provision does not concern financial, investment, oil and communication companies, car dealerships, as well as supermarkets, which remain subject to corporation tax at the increased rate of 35 percent. Likewise, for companies carrying out craft, agricultural and fishing activities, since they are subject to the preferential rate of 10 percent.

The finance bill for 2021 appeared to the public in early September 2020 to be subsequently enacted on December 10, 2020. The tax reform was thus publicly announced nearly four months before the tax rate cut comes into effect. Managers had so sufficient time to put tax planning techniques, including EM schemes, into action. In fact, if they try to maximize company value by minimizing the tax burden, this rate reduction will provide a great incentive to move revenue from the period of higher tax rate (2020) to the period of lower tax rate (2021). Thus, deferred income will be taxed at a reduced rate (15 percent instead of 25 percent), which makes a saving of 40 percent of pre-reform tax expenses.

Indeed, some studies linking taxation and EM have proven that when the statutory corporation tax rate is changed, there is an in-

centive to control earnings, and they have focused mainly on the American, Malaysian, Chinese and Swedish context.

Although the corporate tax rate has been revised downward three times in the contemporary history of Tunisia (in year 2007, 2014 and 2021), no study has been carried out to see if Tunisian businesses respond to changes in the corporation tax rate by managing their earnings. Additionally, to the authors' knowledge, tax reforms in comparable neighboring countries such as Morocco and Algeria, or even in Africa, have not been analyzed in previous accounting research either.

1. LITERATURE REVIEW

1.1. Earnings management and adjusted corporate tax rate

Some research related to taxation and EM supports the motivation to control earnings when the tax rate changes. This subsection presents these different studies in chronological order below.

The first goes to Scholes et al. (1992). The authors examine whether and how American companies deferred income over time in the face of a known schedule of tax rate cuts. The framework is the 1986 US tax act, which reduced the tax rate from 46% to 34% over a two-year period. They explain that enterprises might defer revenue in anticipation of these tax rate cuts by postponing sales and/or accelerating R&D expenditures, advertising campaigns, and pension contributions, which are evidence of real EM. Thus, the authors develop a model of gross margin deferral and acceleration of selling, general, and administrative (SG&A, hereafter) expenses, both by one quarter. They find statistically significant empirical evidence that enterprises shifted gross margin one quarter, but not necessarily SG&A. The results suggest that on average, the 812 sample enterprises saved about \$500,000 in taxes by deferring sales for one quarter. The following study is that by Guenther (1994) and also focused on the 1986 tax reform in United States. The author shows how financial statement income was managed following a significant fall in the corporation tax rate. Evidence of EM is investigated with a focus on current accounting accruals, which include items such as accrued payables and accounts receivable. Using an accruals expectation model, the results of empirical tests show considerably negative current accruals in the period preceding the tax rate cut. Moreover, current accruals are inversely linked to the firm size and positively associ-

ated with debt level. Referring to this study, Roubi and Richardson (1998) examine the management of current discretionary accruals by non-manufacturing firms in Canada, Singapore and Malaysia following changes in tax rates in those countries. The results show that enterprises in Canada and Singapore manage discretionary current accruals in a manner comparable to that discovered by Guenther (1994) for the United States, and to a lesser extent, by firms in Malaysia. Subsequently, Lin (2006) explores if foreign investment businesses in China change their corporate reporting behavior in the face of a pre-determined timetable of corporate tax rate increases. It is a different investigative context from the first two studies. It is a tax-incentive system that allows corporations to pay taxes at a lower rate for a specified period (i.e., zero corporate tax rate for the first two years and a fifty per cent reduction in the relevant tax rate for the next three years), and then at the standard rate (30%) once the period has expired. This tax concession may provide a significant incentive for managers to defer expenses and accelerate revenue in the year before the rate tax increases (year 2 and year 5). As expected, the results show that companies report much larger discretionary current accruals for the year preceding tax rate rises. The author then concludes that even when businesses are enjoying a tax-holiday, they have a strong incentive to lower their tax burden. Later and also in the context of China, Zeng (2014) examines whether firms managed earnings around tax rate cut following the Chinese tax reform of 2007. Unlike previous studies, the author considers both the accounting and the real EM. From a sample of listed Chinese real estate corporations, the results suggest that managers shift income from the last quarter of 2007, when the corporate tax rate is 33 percent, to the first quarter of 2008, when it is 25 percent, thus saving on tax payments. Finally, Sundvik (2016) investigates the link between Sweden's two recent corpo-

rate tax reforms and EM from large private company data sets. The impact of tax rate reductions is examined on aggregate and segmented metrics of accounting EM. The empirical results show that taxation obviously affects the high book-tax consistency settings of these companies. Downward earnings management is recorded before tax cuts. It is mainly accounts receivable that drive these results, while inventory and depreciation provision tools provide weaker evidence.

It is noted that all of these studies dealt with accrual-based EM, except Zeng (2014) who combined this form of EM with real EM.

1.2. Accrual-based EM and real EM

Most prior studies dealing with EM adopted a single strategy: accounting EM or real EM. The first involves managers using their judgment in financial statements to affect the magnitude of accruals and earnings as a result. As for the second, also known as EM through real activities manipulation, Roychowdhury (2006) defines it as “management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds” (p. 337). Since the theoretical work of Roychowdhury (2006), some authors, including Cohen et al. (2008), Cohen and Zarowin (2010), and Baker et al. (2018) found that organizations employ both alternative strategies to reach the targeted level of earnings. Thus, examining each type of strategy will not be able to explain the entire impact of EM practice and may lead to inaccurate conclusions (Zang, 2012).

Some authors, including Barton (2001), Cohen et al. (2008), and Zang (2012), argue that managers use accounting EM and real EM as substitutes. Others (Matsuura, 2008; Chen et al., 2012) support that the association between accounting EM and real EM is complementary and that managers should adopt both strategies over the same period. In this context, the study by Elleuch Hamza and Kortas (2019) was recently added to the literature. The authors examine the association between accrual-based EM and real EM (as defined by discretionary expenses and sales manipulation) for Tunisian corporations. The findings show not only a complementing link between accrual-based EM and sales manipulation, but also a substitutive in-

teraction between accruals management and discretionary expenses, based on simultaneous equation systems calculated using panel data.

Finally, whether they are substitutable and/or complementary, the accrual-based EM and the real EM should be studied jointly to achieve reliable results.

1.3. Expected results

As per Tunisia’s 2021 Finance Law, the general corporate tax rate of 25 percent has been reduced to 15 percent applicable for income realized as from January 1, 2021. Although enacted on December 10, 2020, the tax reform appeared to the public nearly four months before the new reduced tax rate comes into effect. Managers therefore have sufficient time to adopt tax planning strategies, including EM practice. Assuming that managers pursue a wealth maximization approach, they are likely to accelerate expenditures so that they are recognized in the fiscal year prior to the tax rate reduction and deducted from taxable income in 2020. Similarly, they are expected to postpone revenues to be recognized in the fiscal year after the tax rate cut and included in the calculation of taxable income in 2021. Indeed, deferring 1 TND of taxable income from 2020 to 2021 would be equivalent to earning 13.33 percent (i.e. $1 \times (1 - 0.15) = 1.133 \times (1 - 0.25)$).

Earnings can be controlled in a variety of ways. Delaying the shipment of finished goods or invoicing, increasing bad-debt provision, increasing inventory write-offs, accelerating the purchase of expensive inventory at year-end when LIFO is used, accelerating R&D, advertising campaigns, and pension contributions, classifying manufacturing overheads more into period costs rather than inventory costs, treating capital expenditures as expenses, and other strategies can all help managers generate a lower income. For the deferral of accounting income, such treatment of expenses and revenues for tax purposes appears to be a sufficient but not required requirement. Guenther (1994) goes on to say that companies that delay taxable income also defer financial statement income.

This paper attempts to examine earnings management practices in response to the 2021 corporate tax reform in Tunisia.

2. METHODOLOGY

2.1. Data

This study starts with all the Tunisian public offering companies publishing their financial reports of June 30, 2021 (158 firms). It then excludes financial, investment, oil and communications companies, car dealerships, as well as supermarkets, which remain subject to corporation tax at the increased rate of 35 percent. Likewise, for companies carrying out craft, agricultural and fishing activities, since they are subject to the reduced rate of 10 percent. It also eliminates the cases of unavailability of data. After restatement, the final sample contains 61 firms observed over the period from July 1, 2015 to June 30, 2021. Noting that among these companies, 39 (64% of the sample) are listed on the Tunisian stock exchange. The information was gathered by hand from the Financial Market Council's (<http://www.cmf.org.tn>) and Tunisian Stock Exchange's (<http://www.bvmt.com.tn>) semi-annual and yearly financial reports.

2.1.1. Dependent variable

The endogenous variable is “earnings management, (EM)”. Like Zang (2014), this study focuses on both real and accrual-based EM.

2.1.2. The accrual-based EM (AEM)

Consistent with most of the EM research, the modified Jones model introduced by Dechow et al. (1995) is used to assess the non-discretionary level of total accruals. The residuals from firm-specific regression of changes in non-cash sales and gross level of PPE are used to calculate discretionary accruals. The latter are then computed as a proxy for accounting EM and are as follows:

2.1.3. First, calculate Total Accruals (TAC):

$$\frac{TAC_{i,t(S)}}{TA_{i,t-1}} = \frac{1}{TA_{i,t-1}} \times \left[\alpha_0 + \alpha_1 (\Delta REV_{i,t(S)} - \Delta REC_{i,t(S)}) + \alpha_2 PPE_{i,t} \right] + \varepsilon_{i,t}, \quad (1)$$

where, t and i respectively denote the time periods of 2015–2021 and the firm; TAC the total accruals

for one semester, which is equal to earnings before exceptional items less operating cash flows; TA the total assets; ΔREV the change in revenues in one semester; ΔREC the change in net accounts receivables in one semester; PPE stands for gross property, plant and equipment at the end of each semester, and the residual term ε denotes the discretionary accruals.

The non-discretionary accruals are then generated using the estimated parameters from equation (1). Discretionary or abnormal accruals are then determined as follows:

$$DA_{i,t(S)} = \frac{TAC_{i,t(S)}}{TA_{i,t-1}} - \left(\hat{\alpha}_0 + \hat{\alpha}_1 \frac{\Delta REV_{i,t(S)} - \Delta REC_{i,t(S)}}{TA_{i,t-1}} + \hat{\alpha}_2 \frac{PPE_{i,t}}{TA_{i,t-1}} \right) \quad (2)$$

Obviously, high discretionary accruals show an upward accounting EM. In the following, $AEM = DA$.

2.1.4. The real EM (REM)

As for real activities manipulation, the study focuses on the discretionary spending. They generally include advertising, R&D and SG&A expenditures such as staff training, travel and maintenance costs. Roychowdhury (2006) supports that rising real EM is likely to have abnormally low SG&A expenses. Hence, the following regression is designed to assess the real EM:

$$\frac{DEX_{i,t(S)}}{TA_{i,t-1}} = \gamma_1 \frac{1}{TA_{i,t-1}} + \gamma_2 \frac{SALES_{i,t(S)}}{TA_{i,t-1}} + \varepsilon_{i,t}, \quad (3)$$

where, t is for the time periods of 2015–2021; DEX is the discretionary expenses for one semester for firm i : Sum of advertising expenses, R&D and SG&A expenses; TA is the total assets at the end of each semester of last year; and the residual term ε indicates the abnormal discretionary expenses.

To obtain the residuals, the difference between the actual values of discretionary expenses and the usual levels anticipated by the formula (3) is

computed. The abnormal discretionary expenses (AbnDEx) are then determined as follows:

$$AbnDEx_{i,t(S)} = \frac{DEX_{i,t(S)}}{TA_{i,t-1}} - \left(\hat{\gamma}_1 \frac{1}{TA_{i,t-1}} + \hat{\gamma}_2 \frac{SALES_{i,t(S)}}{TA_{i,t-1}} \right) \quad (4)$$

Since upward (downward) real EM has low (high) unusual discretionary expenses (AbnDex), these are multiplied by (-1). In the following, $REM = - AbnDEx$.

In this study, the real EM is combined with accrual-based EM to get the total EM. Then, $EM = AEM + REM = DA + (- AbnDEx)$

2.1.5. Independent variable

The empirical study has two models to design. For the first, the independent variable is a binary variable taking the value 1 if it is the year 2020 (the year preceding the reduction in the tax rate), otherwise 0. For the second, the independent variable is also a binary variable taking the value 1 if it is the year 2021 (year following the tax rate cut), otherwise 0.

2.1.6. Control variables

Six exogenous variables are added to the variable of interest. The first is the firm performance, which is assessed in terms of return on assets (ROA). The leverage level is the second variable (LEV). The Debt-to-total assets ratio is a proxy for leverage (Ohlson 1980). Furthermore, a binary variable (AUD) denoting a BIG4-auditor is added because high quality audit may restrict EM (Van Tendeloo & Vanstraelen, 2008). Manager ownership (MAN) is the fourth control variable, and it has two opposing effects on managers' motivations (Jensen & Meckling, 1976; Morck et al., 1988). It is calculated as the fraction of shares held by managers. The model also includes the firm size (SIZE) measured by the logarithm of total assets. Larger enterprises may be more sensitive to political costs, according to Watts and Zimmerman (1978), and hence more prone to utilize accounting methods that decrease net income. The last control variable is lagged earnings management (L.EM) in order to control the accounting variables reversibility (Hunt et al., 1996).

2.2. Empirical approach specification

The corporate governance research usually encounters endogeneity concerns because the investigated variables are inherently endogenous (Bhagat & Jeffries, 2005). In OLS regression estimates, this endogeneity is most likely to occur (Semadeni et al., 2014; Hollandts et al., 2018). Furthermore, since the model for panel data includes, among the explanatory variables, the lagged dependent variable, traditional estimate approaches are no longer valid for dynamic panel data and may report biased coefficients (Kiviet, 1995). In a dynamic panel, a system GMM estimator (Blundell & Bond, 1998) is used to alleviate endogeneity issues and adjust for particular individual and temporal effects. It constitutes an empirical contribution of this study, compared to the large empirical works dealing with EM by OLS regressions.

To examine the EM in the period preceding the tax rate reduction, this model is proposed:

$$(M_1) EM_{it(S2)} = \beta_1 L.EM_{it(S2)} + \beta_2 Y2020 + \beta_3 ROA_{it} + \beta_4 LEV_{it} + \beta_5 AUD_{it} + \beta_6 MAN_{it} + \beta_7 SIZE_{it} + \alpha_i + \varepsilon_{it} \quad (5)$$

Likewise, to examine the EM in the period following the rate reduction, this model is proposed:

$$(M_2) EM_{it(S1)} = \beta_1 L.EM_{it(S1)} + \beta_2 Y2021 + \beta_3 ROA_{it} + \beta_4 LEV_{it} + \beta_5 AUD_{it} + \beta_6 MAN_{it} + \beta_7 SIZE_{it} + \alpha_i + \varepsilon_{it} \quad (6)$$

$EM_{it(S2)}$ is the earnings management for the second semester. β_2 is expected to be negative. $EM_{it(S1)}$ is the earnings management for the first semester. β_2 is expected to be positive.

3. RESULTS AND DISCUSSION

3.1. Preliminary data analysis

The statistical characteristics of the collected data are verified in this section. Table 1 reports the main descriptive statistics of the study variables. It displays that on average and for the first semester,

Table 1. Descriptive statistics

Variables	Mean	Median	SD	Min.	Max.
EM(S1)	0.0113	0.0046	0.3238	-1.2922	1.9174
AEM(S1)	0.0089	0.0021	0.1636	-1.1491	1.6447
RM(S1)	0.0024	-0.0006	0.0482	-0.3701	0.5633
EM(S2)	0.0211	-0.0092	0.4171	-2.3881	2.1974
AEM(S2)	0.0163	-0.0018	0.4288	-1.9551	2.1608
REM(S2)	0.0048	0.0009	0.1417	-1.2240	0.8711
ROA	0.0592	0.0454	0.1105	-0.3532	0.7899
LEV	0.5827	0.4487	0.3194	0	2.2650
AUDIT	0.1967	0	0.2546	0	1
MAN	0.1545	0.2820	0.1922	0	0.8333
SIZE	16.2144	15.3833	4.6411	11.1872	20.6442

the total EM is 0.011, the accounting EM is 0.009, and the real EM is 0.002. For the second semester, on average, the total EM is 0.021, the accounting EM is 0.016, and the real EM is 0.004. These figures show that Tunisian public offering enterprises use both real and accrual-based EM to improve their earnings. Regarding the control variables, Tunisian corporations appear to be highly leveraged. In fact, the leverage ratio surpasses half of total assets on average (mean = 0.582) and ranges from 0 to 2.265. As for ROA, it varies between -0.353 and 0.789 having an average of 0.059. The dummy variable "Audit quality" presents an average of 0.196, and the manager ownership is on average 0.154 ranging from 0 to 0.833.

Table 2 presents the correlation matrix between the various exogenous variables to highlight any possible multicollinearity issues. When the correlation between two variables is greater than 0.8, this might be an issue (Bryman & Cramer, 2001). Table 2 shows that the AUDIT-SIZE variables had the highest correlation with a value of 0.69, indicating that there is no concern of multicollinearity between independent variables.

Table 3 also shows the mean AEM (S2), REM (S2), and EM (S2) differences between 2020 and other years, as well as the mean AEM (S1), REM (S1), and EM (S1) differences between 2021 and other years.

Table 2. Pearson's correlation matrix

	L.EM (S1)	L.AEM (S1)	L.REM (S1)	L.EM (S2)	L.AEM (S2)	L.REM (S2)	ROA	LEV	AUD	MAN	SIZE
LEM (S1)	1										
L.AEM (S1)	0.74	1									
L.REM (S1)	0.68	0.83	1								
LEM (S2)	0.18	0.09	0.11	1							
L.AEM (S2)	0.11	0.24	0.08	0.61	1						
L.REM (S2)	0.15	0.009	0.13	0.79	0.91	1					
ROA	0.07	-0.04	0.08	-0.09	-0.02	-0.05	1				
LEV	0.02	-0.06	0.13	-0.10	-0.05	-0.08	0.44	1			
AUD	0.04	0.00	0.02	-0.15	-0.06	-0.11	0.07	0.02	1		
MAN	0.19	0.37	0.11	0.31	0.26	0.41	-0.00	-0.09	0.12	1	
SIZE	0.18	0.17	0.08	0.14	0.11	0.10	0.51	-0.42	0.69	-0.23	1

Table 3. Differences between earnings management means

Variable	Mean year 2020	Mean other years	t-test
AEM (S2)	-0.013	0.022	2.58***
REM (S2)	-0.009	0.007	0.86
EM (S2)	-0.022	0.029	1.98**
Variable	Mean year 2021	Mean other years	t-test
AEM (S1)	0.031	0.004	1.62**
REM (S1)	0.007	0.001	-0.34
EM (S1)	0.038	0.006	1.47*

Table 4. Model (M1) estimate results

Explanatory variables	Expected relation	Dependent variable		
		EM (S2) Coef. (SE)	AEM (S2) Coef. (SE)	REM (S2) Coef. (SE)
L.DV	?	-0.014 (0.029)	-0.019 (0.031)	0.008 (0.003)
Y2020	-	-0.031** (0.000)	-0.022** (0.004)	-0.013* (0.002)
ROA	-	-0.041*** (0.006)	-0.020** (0.014)	-0.011** (0.000)
LEV	+	0.017** (0.014)	0.023*** (0.000)	0.003* (0.001)
AUD	-	-0.021*** (0.033)	-0.018*** (0.047)	-0.009** (0.018)
MAN	?	0.002 (0.008)	0.001 (0.005)	0.000 (0.002)
SIZE	-	-0.017 (0.039)	-0.005 (0.031)	0.003 (0.006)
Constant	?	-0.523*** (0.022)	-0.395*** (0.076)	-0.187*** (0.029)
Observations		305	305	305
Groups		61	61	61
AR(1)		0.000	0.000	0.001
AR(2)		0.219	0.304	0.263
N. instrum.		21	25	22
Sargan test		0.366	0.408	0.319

Notes: Standard errors in parentheses. ***, **, and * mean Significant at 0.01, 0.05 and 0.1 level, respectively.

It shows that Tunisian companies have lower AEM in the second half of 2020, and higher AEM in the first half of 2021. However, REM is in good direction but not significant. Overall, the EM is lower in the second half of 2020, and is higher in the first half of 2021.

3.2. Empirical results

Using Stata version 15 software, the findings of system GMM estimations are presented in Tables 4 and 5. It is noted that the presence of an AR (1) effect for the residuals is accepted for all regressions¹, indicating that the dynamic model is suitable. The absence of AR effect (2) is also accepted². Moreover, the Sargan test shows that the instruments defined for the different regressions are valid.

Table 4 presents the output of the model (M₁) estimate. The variable of interest is successively the EM, the accrual-based EM and the real EM.

For the total earnings management (EM), the response coefficient on Y2020 is significantly nega-

tive (-0.031). This finding agrees with the conclusions of certain works, including Guenther (1994), Zeng (2014), and Sundvik (2016). Furthermore, the results show that for the accounting and real EM, the coefficients on Y2020 are also negative (-0.025 and -0.011, respectively) and statistically significant at the respective thresholds of 5% and 10%. Tunisian firms then have both accounting and real EM downward in the second half of 2020. It is also noted that the accrual-based EM is more extent than real EM.

Regarding the control variables and as expected, Table 4 shows that performance (ROA) and audit quality (AUD) have a negative and substantial influence on the EM practices, including real and accrual-based EM; whereas leverage (LEV) has a significant and positive effect. As for manager ownership (MAN) and firm size (SIZE), the results show no effect on EM.

Table 5 displays the output of the model (M₂) estimate. Similar to the estimation of the model (M₁), the dependent variable is successively the total EM

1 *p* value is less than 5%, so (H_1) is accepted.

2 *p* value is greater than 5%, so (H_0) is kept.

Table 5. Model (M₂) estimate results

Explanatory variables	Expected sign	Dependent variable		
		EM (\$1) Coeff. (SE)	AEM (\$1) Coeff. (SE)	REM (\$1) Coeff. (SE)
L.DV	?	-0.008 (0.017)	-0.011 (0.024)	-0.031 (0.005)
Y2021	+	0.039** (0.007)	0.012* (0.019)	0.031** (0.003)
ROA	-	-0.035** (0.018)	-0.024*** (0.011)	-0.011 (0.007)
LEV	+	0.019*** (0.022)	0.011** (0.003)	0.006* (0.021)
AUD	-	-0.027*** (0.023)	-0.015*** (0.029)	-0.011** (0.009)
MAN	?	0.009 (0.012)	0.004 (0.000)	0.001 (0.003)
SIZE	-	-0.019 (0.027)	-0.016 (0.021)	0.007 (0.005)
Constant	?	0.374*** (0.031)	0.344*** (0.029)	0.251*** (0.031)
Observations		305	305	305
Groups		61	61	61
AR(1)		0.001	0.000	0.002
AR(2)		0.307	0.364	0.279
N. instrum.		24	22	22
Sargan test		0.411	0.344	0.422

Notes: Standard errors in parentheses. ***, **, and * mean Significant at 0.01, 0.05 and 0.1 level, respectively.

(EM), the accrual-based EM (AEM) and the real EM (REM).

For the total EM, the response coefficient on Y2021 is significantly positive (0.039). This finding largely confirms the conclusion of Zeng (2014). Furthermore, the results show that for the accounting and real EM, the response coefficients on Y2021 are also positive (0.012 and 0.031, respectively) and statistically significant at the respective thresholds of 10% and 5%. Tunisian firms then have both accounting and real EM upward in the first half of 2021. However, the real EM is more extent than the accrual-based EM.

As for control variables, almost the same relationships are found (except for the ROA-REM relationship which is no longer statistically significant). Indeed, Table 5 shows that the performance (ROA) and audit quality (AUD) both have a negative effect on the EM practice. The leverage ratio

(LEV) presents a significantly positive impact on EM, including real and accounting EM. This may suggest that corporations with high leverage have an incentive to increase income to avoid breach of loan lending agreement. For the firm size (SIZE) and manager ownership (MAN) variables, they still have no significant effect on EM.

All of these findings argue that Tunisia's 2021 tax reform gives a strong incentive to shift income from the period of higher tax rate (2020) to the period of lower tax rate (2021). Corporations will save money because deferred income will be taxed at a reduced rate (15 percent instead of 25 percent). To do this, managers jointly use the accounting and real EM. They accelerate spending to be recognized in the fiscal year before the tax rate cut and subtracted from taxable income of 2020; and similarly, they postpone revenues to be recognized in the fiscal year after the tax rate cut and included in 2021's taxable income.

CONCLUSION

This paper attempts to investigate EM practices around the tax rate cut following the Tunisian tax reform of 2021. Using the system GMM estimator, the findings argue that Tunisia's 2021 tax reform provides a strong incentive to shift income from the period of higher tax rate (2020) towards the period of the lower tax rate (2021), achieving significant savings for corporations. More particular, the findings suggest that Tunisian enterprises are managing both accounting and real earnings downward in the second half of 2020, with accrual-based EM being more prominent than real EM. The results for the first half of 2021 demonstrate an increased use of accruals management and real management, as well as an increased use of real EM.

These conclusions largely support the previous literature (Guenther, 1994; Zeng, 2014; Lin, 2016). On the other hand, this work adds to the current body of knowledge. Indeed, it is the first study in Tunisia, if not Africa, to investigate the EM following a change in the statutory corporate tax rate, which might be a major boon given the region's differences from the US, Europe, and Asia. Furthermore, this study is associated with a few previous publications that dealt with both accounting and real EM. Furthermore, the system GMM constitutes an empirical contribution, compared to the large empirical works dealing with earnings management by OLS regressions. As for social implication, the findings may be of interest to tax officials when enacting tax policies intended to prevent tax evasion misuse. In addition, external auditors and tax auditors should regard the period around the change in the corporate tax rate as more suspect.

AUTHOR CONTRIBUTIONS

Conceptualization: Riadh Garfatta, Elmoez Zaabi.

Data curation: Imen Zorgati, Elmoez Zaabi.

Formal analysis: Imen Zorgati.

Investigation: Imen Zorgati.

Methodology: Imen Zorgati, Elmoez Zaabi.

Project administration: Riadh Garfatta.

Resources: Elmoez Zaabi.

Software: Imen Zorgati.

Supervision: Riadh Garfatta, Elmoez Zaabi.

Validation: Riadh Garfatta, Imen Zorgati, Elmoez Zaabi.

Visualization: Riadh Garfatta.

Writing – original draft: Riadh Garfatta.

Writing – review & editing: Riadh Garfatta.

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