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# The Impact of Earnings Management on Stock Returns: The Case of Tunisian Firms

Sonia Sayari <sup>α</sup>, Fayçal Mraïhi <sup>σ</sup>, Alain Finet <sup>ρ</sup> & Abdelwahed Omri <sup>ω</sup>

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## 1. INTRODUCTION

Earnings management is a crucial issue for stockholders and investors. Investor's evaluation of a firm (firm performance and stocks returns on the financial market) depends on selecting a measurement model of earnings management.

Our study aims at presenting and comparing four measurement models of earnings management in terms of information content of the Tunisian stock market, trying to predict managers' behaviour. According to Selon Dechow and Skinner (2000) "the current research methodologies simply are not that good that identifying managers of firms that practice earnings management". Measurement problems imposed while detecting manipulation are numerous and complex (Dechow *et al.*, 1995; Collins and Hribar, 1999; Courteau and al, 2011).

During these last decades, research conducted on earnings management reached mixed results. Some

studies report results confirming interest in earnings management (Brochet and al, 2012) and the reverse is true (Courteau and al, 2011). These mixed results in the literature are justified by the difficulty in giving a universal definition to earnings management concept and the limitations of the adopted methodologies. Then, this debate exists since ever and cannot be resolved in a very simple manner. Our study is motivated by lack of empirical studies focusing on measuring effect of earnings management on stock prices within the Tunisian context, mainly because accounting legislation is known for its fiscal and accounting rigidity which hinders frequent changes of accounting methods and requires that financial communication content should respect a certain number of rules notably in terms of publishing earnings. In a similar vein, according to Courteau (2011), use of Chtourou model (2001), seems to produce an evolution in earnings management practice.

Taking into account these lacks, a crucial question is raised on the possibility to confirm that managers tend really to affect the Tunisian financial market through earnings management?

To this end, we focused on investors' behaviour with the aim of testing the effect of earnings publishing on stock returns.

This choice has been adopted after reviewing the theoretical and empirical models focusing on the topic and examining discretionary accounting practices, which affect published earnings while respecting both accounting texts and rules. Such discretionary practices relate nevertheless to manipulations which aim at influencing a group or an individual to make them or him/her react accordingly.

During these last years bankruptcy of Enron and Wordcom has raised serious questions on earnings management practices. However, despite these financial scandals, the accounting model remains an informational vector enabling information users to formulate or revise their expectations of the firm's economic perspectives. At the moment of announcing accounting results, there appeared some speculations that consequently influenced stock prices. Beaver (1968), Ball and Brown (1968), Divesh Sharma (2003), David, Burgstahler (2004), Colasse (2004) and Scot and al (2011) showed that publicly announcing accounting results on the US market leads to a significant variation of stock returns the very day. There is a positive

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relationship between stock prices and unexpected profits, suggesting that the higher is surprise effect (good or bad news), the more significant is market reaction (Qiang and al 2010). Accordingly, if accounting information diffusion leads to a change in equilibrium stock price, we can point intuitively to earnings management practices as one of the reasons. Within an information perspective, accounting production, opportunistic manipulation of accounting results and the way they are presented to the public may represent a tool of influencing or guiding positively investors' anticipation towards increasing stock performances. This line of thinking, paradigmatic as it is, is known explicitly as earnings management relying on flexibility of accounting conventions to declare higher profits.

Managers are led to maximise their financial communication policy by presenting the market the most successful image, exploiting insufficiencies of accounting rules. Indeed, retaining the most interesting norm inherent to accounting processing or a specific position (French, IASC, FASB, international practices ..) adding hiding legal undertakings can only reinforce context of information asymmetry that determines market functioning. Managers play all tricks, both at the level of form or content, to respond to markets expectations and requirements.

In Tunisia, few studies are conducted to examine the relationship between accounting manipulation and returns, though the issue of manipulation is regularly addressed by researchers. However, in the US, many studies explicitly examined as a topic or as a context of research earnings management. Many recent studies like those conducted by Mastumra (2003) and young (2005), attempted to determine the impact of accounting manipulation on the financial market.

Our study on the Tunisian stock market answers to this perspective. Such an emerging and recent market is characterised by a strong information asymmetry and a weak level of information efficiency. These specificities may lead to identify earnings management practices particular to the Tunisian market. Then, we concern ourselves with the degree of the impact of this accounting practice on investors' behaviour.

Indeed, the aim of this article is to observe whether Tunisian investors are aware of the presence of manipulation practices and whether this latter encourages them to react during earnings publication. If information of financial statements is useful to investors, like the case of net profits (Ball and Brown, 1968; Beaver, 1968; Zhen and al (2005), Foerster (2009), Yang and al (2011), Scott and al (2011), some accounting practices carrying substantial information content are supposed to make the market react. Consistent with the hypothesis of efficient markets in its partial form and with the hypothesis of rational anticipations, only the non-

anticipated portion of information leads to abnormal movements of prices, provided nevertheless that this information is sufficiently relevant. This paper extends that of Sayari and Omri (2006) on the analysis of accounting manipulation between 1996 and 2003 on the Tunis Stock Exchange by lengthening the study period till 2008. Our objectives consist in measuring first earnings management behaviour (through four measurement models) and second in better understanding its determinants. In order to evaluate the impact of this behaviour on stock prices, we adopt the approach proposed by Chtourou et al (2001).

To this end, we present a the first section the fundamental aspects of earnings management and the reaction of the financial market following this behaviour while explaining the reasons likely to lead managers to manipulate accounting figures in view of either scoring advantages, or communicating to investors their own anticipations on the firm's future. The second section presents the used data and describes the methodology used to measure earnings management as well the impact of this behaviour on stock prices.

## II. REVIEW OF THE LITERATURE

### a) *Theories Explaining Earnings Management*

According to efficiency theory, correlation between information and stock markets is noticeable. Indeed, it is declared information which is supposed to be reflected in stocks and not accounting value in itself. In this line of thinking, accounting modification which has no impact on cash flow cannot bring about any information to the market and cannot then affect the price as it has no effect on investors' predictions and expectations<sup>5</sup>.

Studies focusing on phenomena related to information content of accounting profits, highlighted investors tendency to focus on variations in earnings (Foerster, 2009; Yang and al 2011). These studies matured into the functional fixation hypothesis according to which investors are not warned, hence unable to discover the effects of modifying accounting data on cash flows (also accruals).

Often with reference to functional fixation hypothesis, recourse to accounting results is a normal attitude as investors do not adopt any other source of information. Such behaviour is at the origin of this tight combination between stock prices on the one hand and accounting changes on the other, independently from cash-flows<sup>6</sup>.

<sup>5</sup> With regard to this rationality hypothesis, investors refer to cash-flows expectancy and on accounting results to evaluate the firm.

<sup>6</sup> We should mention at this level that a study conducted by Abdelmoula (1997) on the Tunisian financial market examined level of investors' appreciation of different sources of information edited by firms listed on the Tunis Stock Exchange. The assumption in this article presents balance and statement of account as the two essential sources for evaluating Tunisian firms.

obvious that they upgrade evaluation of firm taking into account magnitude of detected manipulations.

What remains are few researchers who show concerns about functional fixation hypothesis, separately considered from other factors. Grossman and Zitglitz (1976) assume that investors' rational behaviour affects and guides naïve investors. Then, naïve investors will be taken to follow rational investors' behaviour when making arbitrage profits till the disappearance of these profits. This will be taken in what follows.

Signal theory came to justify some accounting practices. It assumes that accounting figures need to be confirmed as a genuine tool of signalling market trends, in as much as they allow investors to better appreciate the firm's real value.

The hypothesis recently used by researchers of accounting shows that there is information asymmetry between investors and managers. These latter dispose of private information on the situation and perspectives of the firm and also on its capacity to generate future cash flows. In this context, earnings management may be used as a flexible tool allowing for transmitting to investors private information mainly their own opinions on the long-term strategy of the firm and to shape accounting information, within the limits of law. In particular, accounting result is a variable on which managers wish to act. As mentioned by Beaver (1989), «no other figure in the financial statements receives more attention by investors' community other than earnings per share»<sup>7</sup>. Indeed, at the heart of this theory, manipulated accounting figures is an instrument to signal market trends, in as much as they allow investors to better appreciate the firm's value and build up, in an optimal manner, their stocks portfolios.

Many studies like those of Kim and Verrecchia (1991), Donto and Ronen (1993) and Bamber and Choen (1995) indicate that information asymmetry may guide stock prices reactions during publication of accounting information. Nevertheless, and according to Watts and Zimmerman (1986), competition between firms and motivation to attract the maximum of investors, force managers to present accounting data modified in their favour. As a consequence, firm value is either under-estimated or over-estimated on the market. According to information monopoly line of thinking, managers retain information about firm's future at the expense of investors. Managers diffuse even on the market private information that they hold through an appropriate management of accounting results. Accordingly, Beaver (1968) and Morses (1981) underline that published accounting results have an information content in so far as their declarations are likely to pro-

voke an increase in the variance of abnormal returns mean. Ball and Brown (1968) used these abnormal variations of returns to highlight importance of accounting results to investors during their announcement.

As we have mentioned and to support the notion of managers' operation efficiency in the market through accounting modifications which lead in their turn to a variation in annual results, Jacobson (1963) notes that 75% of changing accounting methods led to an increase in earnings of the studied firms. Irani (2001) provided a similar percentage around 76% of the studied firms benefited from a positive impact of an accounting change on the published results. At this level, we may cite as an example of changing accounting methods, the passage from a decreasing amortisation of contributions to a linear amortisation.

Signal theory based on earnings management is a financial communication tool as underlined by Zhen, Xie et Xu (2005). These researchers contradicted the prejudice according to which earnings management get investors mistaken and defend the thesis that information value of published results is enriched. In contrast to this thesis, other researchers support the idea that earnings management is an attempt to fool stakeholders. Christensen et al (1999) experiment in their turn the possibility of reducing information value of published results through interference of potential motivations of earnings management (Zimmerman 2007).

More recent studies in the accounting field provided models in which these earnings management practices reveal a rational behaviour. In this line of thinking, Hunt, Moyer and Shevlin (1995), Louis (2003) and Zhou (2003) support the idea of market value as positively related to reducing volatility of results through discretionary management. Likewise, Subramanyam (1996) indicates that information content of net earnings is superior to information content of non-discretionary results and cash-flow (Beyer 2009).

#### *b) Studies of the Impact of Earnings Management on Stock Return*

Referring to the hypothesis of information validity of accounting manipulation, some researchers have focused on the relationship between accounting figures and firm evaluation. Indeed, they tried to examine whether manipulated accounting figures reflect more firm evaluation than non-manipulated figures. This is the same like examining whether investors are aware of declared manipulated earnings and their impact on evaluating the firm's stocks.

Empirical studies on this topic can be classified into two categories detailed below.

The initial studies focused on correlation studies<sup>8</sup> which rely on the efficiency hypothesis of

<sup>7</sup>The relationship between accounting results and stock rates is probably the most important relationship in stock market analysis. Its importance is reflected on the attention investors give to the rate-profits ratio. Accounting result corresponds to the sum of two elements which correspond to financial flows or to « accruals » which characterize committed accounting.

<sup>8</sup>For readers interested in this methodology, please refer Dumontier (1999) and Raffournier (2002).

financial markets. This thesis assumes that stock value is the best estimator of the firm's real unobservable value. In this line of thinking, ability to reflect listed stock value will be considered as the parameter that validates all accounting data. To this end, a number of researchers determine degree of informativeness of an accounting result through its level of correlation with the real observed stock value. Subramanyam (1996), by manipulating a sample in the US market, suggests to measure correlation between stock value and a triple measure of the result, i.e. declared net result, the result that could have been declared by the firm in the case of using a simple accounting method instead of a committed accounting procedure and finally the result which should have been declared without manipulation. The second measure relates to global treasury excess fixed as the objective of appreciating interest of a committed accounting method in its systematic type. It is about accounting or some types of products or costs which are affected by the result in the sense that the event which generated them relates to this result, even if these products or costs generated receivables or payments during previous fiscal years or during the coming fiscal years. The third measure of results is hard to track down. Observations that are made of aggregating amounts which are due to accounting manipulation, in a way to obtain a theoretical result equal to the result that could have been published if this latter was not manipulated. Manipulated amounts are determined according to the models which compare amounts object of manipulation with those similar published by firms of the same sector. McNichols (2000) and Randal, al (2003) assume that conceptions of these models and manipulated ammounts should be of the same magnitude for all firms of the same sector. Then, any deviation from an average behaviour of firms is seen to result in manipulations<sup>9</sup>.

Subramanyam (1996) confirms this position indicating that net results are strongly correlated with the firm's market prices more than the simple treasury excess. This argument favours accounting as practised, since published result reflects better firm value more than result generated by a simple cash accounting. Subramanyam's results support similarly the position that theoretical net result, which could have been published, outside manipulation is correlated with firm's market value less than the published result, supposed to be manipulated. Then, recourse to manipulation by managers is done through assimilating to the result the impact of some efficient events during firm evaluation. It provides then an accounting measure of the firm performance which is more consistent with the performance assessed by financial markets as if it is

limited to an extremely rigid interpretation of accounting principle and rules. Subramanyam has shown indeed that manipulated amounts are positively correlated to the firm's market prices. The assumption is that manipulation represents an informational contribution compared to firm value. In this line of thinking, Janin (2000) obtained similar results while conducting studies on a sample of French firms, supporting further the thesis of an improvement in the information content of published accounting figures, by accounting manipulation practices.

Subramanyam and Janin (2000) join on the basic assumption that a manipulated result relects better firm potentials more than a non-manipulated result. However, the authors do not specify whether investors use effectively this information superiority or even whether they are aware of these manipulations.

The second category of studies based on reaction studies methodology pointed to investors' attitudes towards manipulation. Dumontier (1999), Dumontier and Raffournier (2002) and Burgstahler, Leuz (2004) focused on rates movements affected by information to explain how investors react to publication of new information.

Balsam et al. (2002) and Xie (2005) examined a sample of US firms considered to have manipulated their results, to the extent they correspond exactly to those expected by financial analysts. It is clear that reaching such agreements is not a stroke of luck. As for Degeorge et al. (1999) and Koh (2003), they show in an extremely convincing manner that firms are able to provide results practically identical to those expected by investors, because a majority of them use to that end latitudes that accounting rules offer them. The study of Balsam et al (2002) aim at determining whether manipulations are the very incentives which led firms to publish results consistent with those expected. To this end, they first estimated the amounts manipulated. Then, they examine whether investors' reaction to this publication takes into account these manipulations. It seemed that investors react to this information as if the published results were not manipulated. This is not surprising knowing that at the moment of publication, detailed financial statements through which we can assess all eventual manipulation were not already available. Balsam and al (2002) and Burgstahler and al (2004) focused on the manner with which investors react at the moment of publication of these detailed financial statements. They note that manipulations which increased declared results are systematically associated to negative reactions of prices, whereas those which aimed to diminishing declared results are associated to positive reactions. It seems then that investors are aware of manipulations once they possess elements enabling them to detect such manipulations. It seems then

<sup>9</sup>See McNichols' article (2000) for more details.

The results that we mentioned are interesting in as much as they show that financial market is generally not naïve in terms of earnings management strategies. Nevertheless, they enable us to know whether these accounting manipulations have real information content. The study of Dumontier and Elleuch (2002) is rich with recommendations. It examines the French market with the aim of determining whether investors believe that results superior (or inferior) to those the firms could have published in the absence of any manipulation open up positive (or negative) opportunities. Similar to the study of Balsam et al (2002), the study of Dumontier and Elleuch (2002) shows that investors react to result publication as if this latter was not manipulated. Since they are short of elements allowing for detecting manipulations at that moment, Dumontier and Elleuch (2002) pointed to how investors react at the moment of publishing detailed financial statements. They note a positive correlation between manipulations and stock prices movements. This suggests on the one hand that investors are aware of manipulation, as they react accordingly. On the other hand, this suggests that investors consider manipulation as rather informative, as rates variations and manipulation direction are of the same signal. Indeed, a deeper analysis led them to assert that it is the downward manipulation of earnings which led to these rates movements, while upward manipulations were with no significant effect on rates. It seems then that although aware of accounting manipulations, investors do not change evaluation of the firm, when they perceive an upward manipulation tactic. However, they believe that downward manipulations signal that managers have rather pessimistic anticipations on the future of their firm. This leads them to diminish firm value.

### III. IMPACT OF EARNINGS MANAGEMENT ON STOCK RETURNS: THE CASE OF TUNISIAN FIRMS

The aim of this paper is to examine whether discretionary accruals possess information content on the Tunisian market and to test whether earnings management practices affect stock prices of Tunisian firms. The methodology used to this end is that of event studies.

#### a) *Estimating Earnings Management for Tunisian firms*

$$TAC_{ijt} / A_{ijt-1} = \alpha_j (1 / A_{ijt-1}) + \beta_{1j} (\Delta RE_{ijt} / A_{ijt-1}) + \beta_{2j} (PPE_{ijt} / A_{ijt-1}) + e_{ijt} \quad (1)$$

with :

\* $TAC_{ijt}$  = total accruals of a firm i of a group j during year t.

$$TAC_{ijt} = BN_{ijt} - FGE_{ijt} \quad (2)$$

with :

In this section, we try to measure earnings management through computing discretionary accruals, we present the sample, period of study, models to be estimated and the used methodology.

#### i. *The Tunisian Institutional Context*

Since the creation of the New Market in 1996 in Tunisia, the Tunisian context has been offering an interesting ground to analyze this practice. First, Tunisian accounting standards provide managers with a great flexibility to choose accounting practices compared to Anglo-Saxon standards respecting thus the Tunisian conceptual framework with the possibility of presenting their accounts according to IFRS norms<sup>10</sup> or the US GAAP. Additionally, the Tunisian context is known for its ownership concentration of firms and for a financial market with relatively less cash flow.

In contrast to the US, in Tunisia, earnings announcement is subject to investors' acute attention and is seen by them as an objective to reach. This encourages the firm to commit itself to earnings management. It can then be deduced that the Tunisian market may favor earnings management to the upward. Our study may improve our comprehension of earnings management within an environment where financial information is geared towards stakeholders and not only investors (shareholders).

#### ii. *Sample and Period of Study*

Data has been collected from accounting statements of 33 firms quoted at the Stock Exchange of Tunis (BVMT) between 1999 and 2008.

The study is limited only to firms whose data is fully available. Firms of the financial sector (companies, insurance ...) have been deleted as they cannot be studied in the same manner as others because of the specific nature of their activities and financial statements. Among the 33 retained firms, 7 have been eliminated because of unavailability of relevant data.

#### iii. *Earnings Management Measurement Models*

Estimation models of retained accounting accruals of our study are inspired by Jones' model (1991), contributions of Dechow et al. (1991) and de DeAngelo (1986)<sup>11</sup>. Cautious to compare, we have adopted then Chtourou, Bedard and Courteau's procedure (2001) according to which discretionary accruals are defined as residuals of this model:

\* $BN_{ijt}$  = net profit of firm i of group j at year t.

<sup>10</sup>IFRS norms relate essentially to aggregated accounts. The joint use of norms of different organisms is frequent in Switzerland. Then, listed companies often refer to IAS (IFRS), to European Rules.

<sup>11</sup>Total accruals of a firm i at year t ( $ATit$ ) thus consist of two components: (1) non discretionary ( $ANDit$ ) and (2) discretionary ( $ADit$ ). Non discretionary adjustments represent adjustments hard to manipulate.

\* $FGE_{ijt}$  = funds generated by operations of firm i of group j at year t.

\* $A_{ijt-1}$  = total assets recorded at the end of year (t-1).

\* $\Delta RE_{ijt}$  = variation of total net returns between t and t-1 of firm i of group j.

$$\Delta RE_{ijt} = \Delta Rev_{ijt} - \Delta Rec_{ijt} \quad (3)$$

with :

\* $\Delta Rev_{ijt}$  = variation of total returns between t and t-1 of firm i of group j.

$$DAC_{ijt} = TAC_{ijt} / A_{ijt} - [\alpha_j(1 / A_{ijt-1}) + \beta_{1j}(\Delta RE_{ijt} / A_{ijt-1}) + \beta_{2j}(PPE / A_{ijt-1})] \quad (4)$$

This choice is justifiable on many grounds. Indeed, collecting accounting and stock market information of firms could not be done beyond 8 market sessions<sup>12</sup>. Thus, we consider information cumulated by the literature and maximise at the same time the sample size.

Terms between inverted commas represent the non-discretionary part of accruals. It is worth noting that there are many estimation models enabling measurement of this latter component.

Indeed, non-discretionary accruals, which are generally independent from earnings management, are rather sensitive to the economy's general layout as well as to firm-specific factors and correspond, according to DeAngelo (1986), to total accruals of the firm for the previous session.

$$NDAC_{ijt} = TAC_{ijt-1} \quad (5)$$

with

\* $NDAC_{ijt}$  = non-discretionary component of accruals of firm i of group j for session t.

\* $TAC_{ijt-1}$  = total of accruals for the previous session (t-1) of the same firm i of group j.

As for Healy (1985), he measures non-discretionary accruals by average of accruals of the same firm during a given period preceding this year.

$$NDAC_{ijt} = \sum_{t=1}^T \frac{TAC_{ijt-1}}{T} \quad (6)$$

with : T : number of years of the estimation period.

However, Dechow and Sloan (1991) adopt a comparative analysis method by industry and estimate non-discretionary accruals using average of accruals of firms belonging to the same sector with N denoting number of firms belonging to sector j at date t of the firm under study.

\*  $\Delta Rec_{ijt}$  = variation of payables between t and t-1 of firm i of group j.

\*  $PPE_{ijt}$  = gross funds of firm i of group j at date t.

\*  $e_{ijt}$  = residual of the model representing discretionary accruals of firm i of group j at year t ( $DAC_{ijt}$ ).

Since discretionary accruals are measured by residuals of model (1), we should then estimate first the coefficients  $\alpha_j$ ,  $\beta_{1j}$ ,  $\beta_{2j}$  using a panel method for each group of firms. Then we should compute  $DAC_{ijt}$  as follows:

$$NDAC_{ijt} = \sum_{i=1}^N \frac{TAC_{ijt}}{N} \quad (7)$$

Finally, we conclude that there are four known models allowing for estimating non-discretionary accruals. Total accruals are presented by the difference between net profits and funds generated by operations<sup>13</sup> (they are cash flows of current operations computed by the difference between cashed products and expenses). Discretionary accruals will be computed by eliminating non-discretionary accruals from total accruals.

#### IV. METHODOLOGY

First, we compute total accruals for each firm of the sample, during each year of the study period using equation (2). Second, we estimate non-discretionary accruals according to the four mentioned-above approaches, i.e. the amount between inverted commas in equation (4) and equations (5), (6) and (7). Finally, we compute for each firm and for each year discretionary accruals as the difference between total accruals and non-discretionary accruals, computed according to the presented-below four approaches.

This empirical validation allows thus for testing the presence of earnings management within Tunisian firms.

##### a) Interpretation of the Results

Discretionary accruals are computed and classified for all firms according to their importance level. The following tables report the statistics and results for the four models:

<sup>12</sup>According to the literature, financial information for each firm should be studied over a relatively long period of time in order to infer tendency of normal accruals. Thus, the choice will be done according to the highest number of years depending on data availability.

<sup>13</sup>These funds are computed first by adding to net profits, non-payable costs like amortisations by deleting delayed taxes and finally we should add variation of equity, i.e. we should eliminate receivables and add increases in contributing accounts.

*Table 1 :* Descriptive statistics of discretionary accruals computed by model 4

| Model 4  | TAC      | NDAC     | DAC      |
|----------|----------|----------|----------|
| Variance | 0.109891 | 0.041771 | 0.086536 |
| Max      | 0.116965 | 0.067369 | 0.344222 |
| Min      | -1.50451 | -1.02968 | -1.50062 |
| Mean     | -0.17154 | -0.13611 | -0.03543 |

According to model 4, discretionary accruals (-0.13611) decreasing thus total accruals (-0.17154). (-0.03543) stand similar to non-discretionary accruals

*Table 2 :* Descriptive statistics of discretionary accruals computed by model (5)

| Model 5  | TAC      | NDAC     | DAC      |
|----------|----------|----------|----------|
| Variance | 0.109891 | 0.152075 | 0.149515 |
| Max      | 0.116965 | 0.152099 | 1.36601  |
| Min      | -1.50451 | -1.6179  | -1.43053 |
| Mean     | -0.17154 | -0.19423 | 0.022692 |

According to model 5 and referring to the mean, we notice that total accruals (TAC) are negative (-0.17154) despite the up-ward-oriented discretionary behaviour, knowing that this latter measured by positive discretionary accruals (DAC) (0.022692).

*Table 3 :* Descriptive statistics of discretionary accruals computed by model (6)

| Model 6  | TAC      | NDAC     | DAC      |
|----------|----------|----------|----------|
| Variance | 2.297855 | 0.109891 | 1.812823 |
| Max      | 4.486751 | 0.116965 | 4.887637 |
| Min      | -7.24165 | -1.50451 | -5.73714 |
| Mean     | -0.14964 | -0.17154 | 0.0219   |

Likewise, according to model 6, negative non-discretionary accruals hide the positive effect of discretionary accruals (0.0219) at the level of total negative accruals (-0.14964).

*Table 4 :* Descriptive statistics of discretionary accruals computed by model (7)

| Model 7  | TAC      | NDAC     | DAC      |
|----------|----------|----------|----------|
| Variance | 0.01506  | 0.008298 | 0.006762 |
| Max      | 0.116965 | 0.025214 | 0.163054 |
| Min      | -0.40031 | -0.25508 | -0.24852 |
| Mean     | -0.08455 | -0.08455 | -3.4E-18 |

According to model 7, discretionary accruals are invisible hence total accruals (TAC) relate to non-discretionary accruals (NDAC).

According to this study and with reference to these four tables, we notice that the results change according to the used model. Indeed, Model 4 highlights accounting information of the firm under study. Model 5 is based on a manipulation of the previous year only, while model 6 considers average of this behaviour during a past period. As for model 7, it is defined according the sector to which the firm belongs.

The two models 5 and 6 have detected an average positive discretionary accrual whereas it is negative for the other two models (4 and 7). In other words, firms manage their profits to the upward according to models 5 and 6 and to the downward according to models 4 and 7.

This difference in results between models is explained by Young (2004) by the nature of earnings management (management of CA, expenses and provisions) and the structure of the firm's costs. The author insists that these two attributes are not directly observable and consequently he cannot vouch for a "better" model useful for researchers. Thus, he proposes as a solution the distinction between common and specific factors by eliminating specific effects in view of improving measurement of earnings management. It is convenient then to point out that Dechow and Sloan (1991) took in account sectorial average to compute non-discretionary accruals. In contrast, Chung, Ho and Kim (2004) insist that this latter hypothesis is not firms should have the same capital structure and risk.

### b) *Firm size and Discretionary Accruals*

In order to better understand, from an economics philosophy perspective, this earnings management behaviour, we developed a relationship between discretionary accruals and firm size.

According to Zimmerman (1983) the more firm size is important; the higher is the probability of managing profits to the downward. According to this hypothesis, we may say that large firms are more sensitive to political pressures than small firms. They are

thus subject to a great transfer of wealth. This hypothesis has been studied mainly in the oil sector by total cost capitalisation method. In this study, we will classify firms in three groups (large, medium and small firms), according to a size criteria measured by stock market capitalisation.

In order to better analyze this relationship, we will present discretionary accruals for each group of firms (classified successively as large, medium and small) in the following table:

*Table 5 : Discretionary accruals by firm size*

|               | Model 4     | Model 5     | Model 6     | Model 7     |
|---------------|-------------|-------------|-------------|-------------|
| <b>Large</b>  | -0.14752699 | -0.04719644 | -0.03212799 | -0.00510439 |
| <b>Medium</b> | 0.06129647  | 0.11599244  | -0.01852009 | -0.0281159  |
| <b>Small</b>  | -0.02005712 | -0.00072133 | 0.11634905  | 0.0332203   |

According to model 4, large firms manage profits to the downward by obtaining negative discretionary accruals, while earnings for medium-sized firms are managed to the upward as they record positive discretionary accruals. As for small firms discretionary behaviour is relatively unnoticed.

Model 5 results confirm model 4 results. This may explain the mood of each group of firms. Indeed, large firms want to decrease their results to avoid State's interest in income tax. Medium-sized firms want to look performing on the market to gain a better visibility, allowing for collecting external resources. Small firms want to show reliability of their accounting information to promote a positive image needed to their success.

Model 6 which relates to history of total accruals was able to detect a positive discretionary behaviour for small firms. Indeed, these latter had better prove their increasing development in time to confirm possibility of future existence in the market.

Model 7 which relates to the firm's evolution within its sector was able to detect earnings management to the upward for small firms. Indeed, these latter want to prove and show (to their external environment) their competitive competence within their sectors by reporting higher profits.

firms to finance State budget through leveraging higher income taxes. According to Healy (1985), managing accruals is to the downward if generated profits are outside the limits fixed for remunerating managers in order to prove their competence by increasing their future profits.

### a) *Firm Sector and Discretionary Accruals*

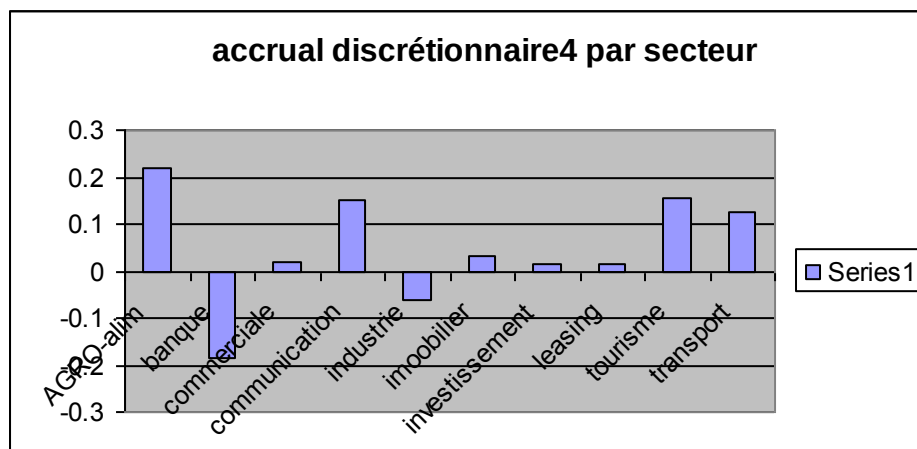
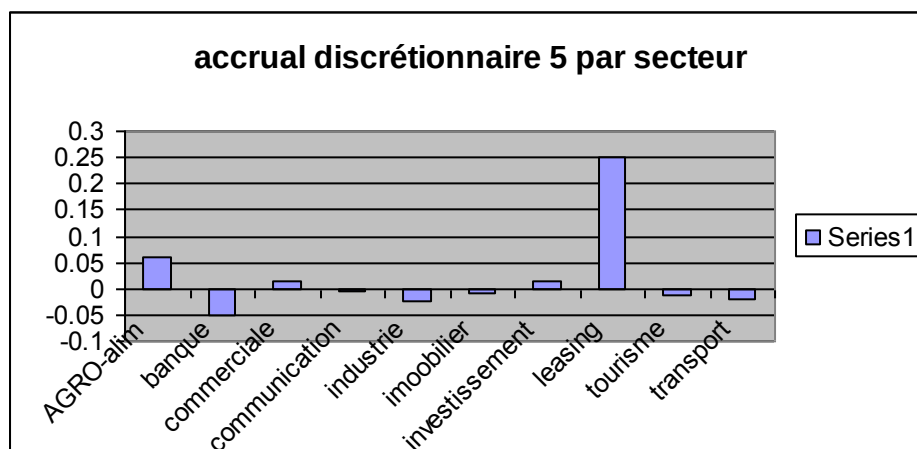
According to Rafournier (1990), firms belonging to highly-concentrated sectors prefer earnings-diminishing method. In order to test the relevance of this hypothesis to Tunisian firms, we set ourselves to analyse discretionary accruals for each sector. The results are presented the following table and figures:

## V. A PRELIMINARY CONCLUSION

According to this study, we notice that large firms possess, in average, negative discretionary accruals as the results of the four models suggest. Likewise, we notice a difference in the results of these four models at the level of averages and small firms. This leads us to conclude that large firms tend to manage to the downward their results. In this line of thinking, Rafournier (1990) assumes that firms using earnings-diminishing methods face a high risk. The same authors insist that large firms prefer decrease their earnings because governments generally focus on large

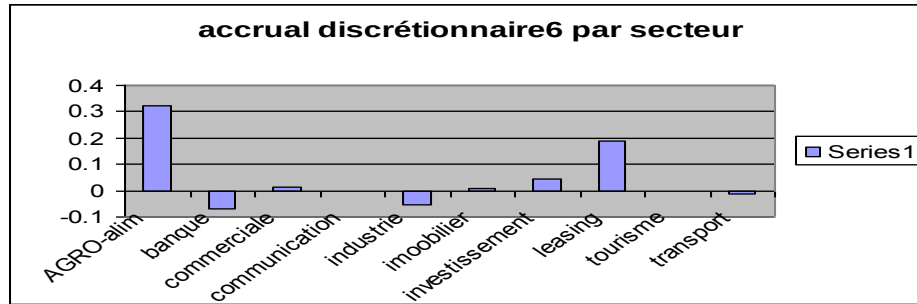
*Table 6* : Discretionary accruals by sector computed with the four models

|               | Model5   | Model6   | Model7   | model4   |
|---------------|----------|----------|----------|----------|
| AGRO-Food     | 0.060295 | 0.320821 | 6.94E-18 | 0.219642 |
| Bank          | -0.0513  | -0.06782 | 5.9E-18  | -0.18631 |
| Trade         | 0.01591  | 0.011722 | 1.2E-17  | 0.019457 |
| communication | -0.00548 | -0.00173 | 0        | 0.149522 |
| Industry      | -0.02428 | -0.05561 | -1.4E-17 | -0.06364 |
| Real estate   | -0.00702 | 0.007745 | 0        | 0.031141 |
| investment    | 0.012858 | 0.045473 | 9.25E-18 | 0.01638  |
| Leasing       | 0.24901  | 0.186105 | -5.6E-17 | 0.013631 |
| Tourism       | -0.01147 | -0.00451 | 0        | 0.156277 |
| Transport     | -0.02051 | -0.01067 | 0        | 0.123929 |

*Figure 1* : Discretionary accruals by sector computed with model 4*Figure 2* : Discretionary accruals by sector computed with model 5

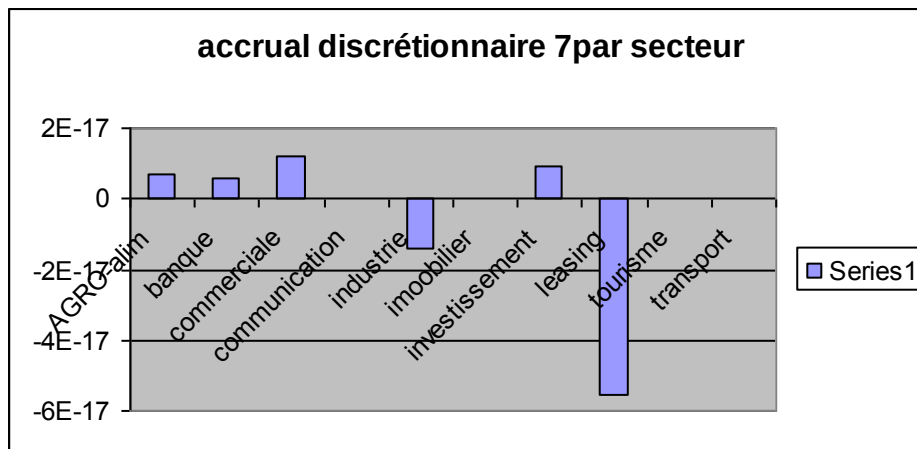
According to model 5, discretionary accruals are low for all sectors except the Leasing sector in which firms tend to manage to the upward earnings (Figure 2).

Figure 3 : Discretionary accruals by sector computed with model (6)



According to model 6, there are higher discretionary accruals for the Agro-food and Leasing sectors (Figure 3).

Figure 4 : Discretionary accruals by sector computed with model (7)



Model 7, which considers behaviour by sector, contradicts the other models and proves that Leasing firms intensively manage their profits to the downward (Figure 4).

As a summary, we notice a difference in the results of the four models. Indeed, model 4 falls short in pointing to the presence of discretionary accruals for the leasing sector (Figure 1). According to model 5, presented in Figure 2, the leasing sector retains the highest level of discretionary accruals compared to the other sectors. In Figure 3 which presents model 6, we detect higher levels of discretionary accruals for Agro-food and leasing sectors. Finally, Figure 4, presenting model 7, detects negative discretionary accruals for the leasing sector.

#### b) Impact of Announcing Manipulated Earnings on the Financial Market: An Application on the Stock Exchange of Tunis

In what follows, we present the to-be-tested hypothesis, the sample, study period, methodology and the obtained results.

##### i. Hypothesis

First, we will attest for the following hypothesis H0: there is no average abnormal return around date of announcing manipulated earnings.

##### ii. Sample and Period of Study

As we have concluded in the third section, and in order to obtain the most interesting estimations of parameters of the market model in terms of reliability and stability, the study period should be enough long and periodicity should be as short as possible. Then, we will estimate the market model by supposing that announcement date is the date of the JORT (government official laws bulletin) publication. However, use of daily data leads to missing data problems biasing thus estimation results. To mend for this, we had better ignore stocks whose number of quotation days is low, which enabled us to select the most-liquid 18 stocks to be presented below with their estimations.

##### iii. Methodology

##### ✓ test of « $H_0$ » : $RACM=0$

Previous literature indicates that after having fixed announcement date and estimation period, the first step consists in estimating the market model written by equation 2, section three above.

The second step consists of computing abnormal returns during event date. Indeed, we will compute during the 30 days around announcement date (15 days before and 15 days after) what follows:

$$RA_{i,t} = R_{i,t} - E(R_{i,t})$$

With:

$RA_{i,t}$  : abnormal returns of stock i at date t.

$R_{i,t}$  : observed returns of stock i at date t

$E(R_{i,t})$  : expected returns of stock i at date t in the absence of an event, i.e. the norm computed as the return expected by the market model after having estimated its parameters and replacing market return with its value.

The third step will be devoted to computing for each stock its 30-day cumulative abnormal return. Hence, cumulative abnormal return of a stock i during the event period is computed as follows:

$$RAC_i = \sum_{t=-15}^{15} RA_{i,t}$$

The fourth step consists of grouping together all the stocks and computing average cumulative abnormal return of the sample "RACM" and testing  $H_0$  hypothesis according to which this average cumulative abnormal return is null.

Grouping together stock will depend on discretionary accruals identified in the previous section according to the four models. This will enable us to point to the effect of this behaviour on stocks' abnormal returns.

#### iv. *Results and Interpretation of Hypothesis $H_0$*

First, we test the effect of earnings announcement on abnormal returns without considering effect of manipulation by computing cumulative abnormal return of the entire sample. Then, we group together stocks into three categories according to level of discretionary accruals. At this level, we estimate cumulative abnormal returns of each group and for each of the four models used in section one above.

##### a. *Average Cumulative abnormal returns « RACM » of the entire sample*

Cumulative abnormal return at the end of event period for each stock is reported in the following table<sup>14</sup>:

*Table 7 : Cumulative Abnormal Return*

|      | RAC      |           | RAC      |
|------|----------|-----------|----------|
| ATL  | -0.11975 | SOTETEL   | 0.017543 |
| BIAT | 0.106166 | SOTUMAG   | 0.085684 |
| BNA  | -0.10919 | SOTUVER   | -0.0696  |
| BS   | -0.18126 | SPEDIT    | 0.056664 |
| BT   | -0.00239 | STB       | 0.325017 |
| BTEI | 0.072717 | TUNISAIR  | -0.01999 |
| CIL  | 0.00923  | TUNISLEAS | -0.02943 |
| SFBT | 0.093056 | UBCI      | -0.04485 |
| SIAM | -0.02193 | UIB       | -0.05085 |

In order to test the effect of earnings announcement on returns, we compute average cumulative abnormal return, standard deviation and "t-student" of cumulative abnormal returns of the entire sample:

*Table 7 : Average Cumulative Abnormal Returns of the Entire Sample*

| Std Dev    | RACM    | student |
|------------|---------|---------|
| 0.00111501 | 0.00649 | 5.821   |

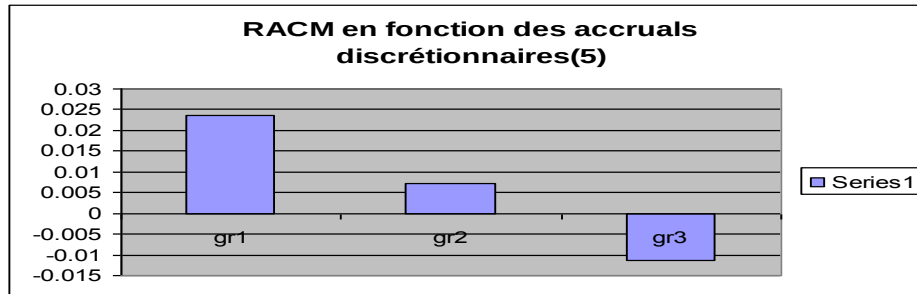
We note that "t-student" (5.821) approximates 6, a value neatly superior to 2. Accordingly, we reject  $H_0$  and confirm that on the whole earnings announcement significantly and positively affects average cumulative abnormal return. Hence, earnings announcement carries information content that might significantly influence market reaction. This conclusion corroborates those of Ball and Brown (1968) and Patell and Wolsfon (1984). Nevertheless, this conclusion needs further analysis to prove with confidence that managers tend to influence the market, not by their good behaviour but rather through publishing accounting information manipulated by discretionary accruals.

##### b. *Effect of discretionary accruals on average cumulative abnormal returns « RACM »*

For each of the four accruals-determining models, we classify first the 18 firms in a decreasing order according to level of discretionary accruals. Second, we classify them into three 6-firm groups. Third, we compute for each group corresponding average cumulative abnormal returns.

In order to better study the effect of discretionary accruals on average cumulative abnormal returns, we graphically report level of RACM of each group and for each model.

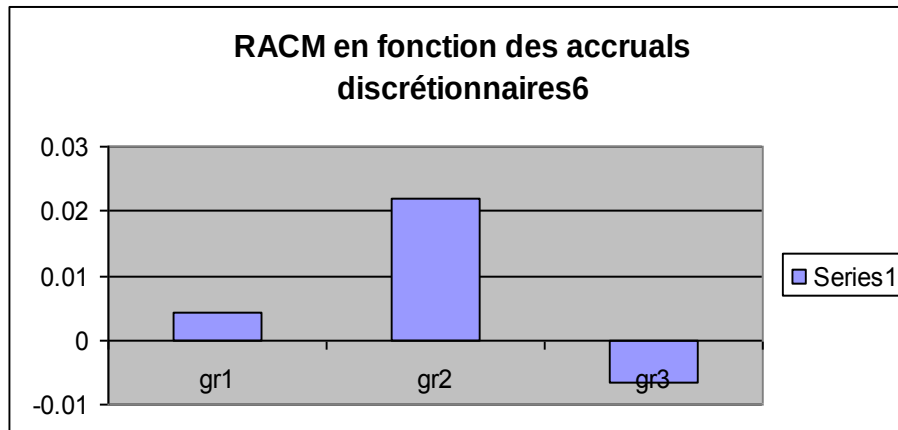
<sup>14</sup>Details about cumulative abnormal returns during the whole event period are presented in appendix 3.

*Figure 5* : RACM in terms of discretionary accruals computed with model (5)

According to model 5, firms whose discretionary accruals are positively high (group 1) have interesting high returns compared to the estimated norm, whereas firms whose discretionary accruals are modest (group 2) record a return slightly superior to the norm. However, firms whose discretionary accruals are negatively high (group 3) record a return inferior to the

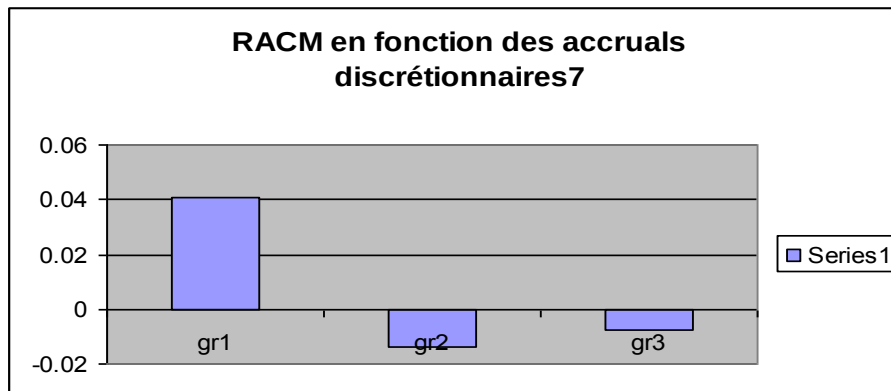
norm. This leads us to conclude that upward earnings management increases positive abnormal returns and that downward earnings management increases negative abnormal returns (Figure 5).

The results given by model 5 are reported in Figure 6 and confirm the results given by model 4.

*Figure 6* : RACM in terms of discretionary accruals computed with model (6)

According to model 6, firms with a modest level of discretionary accruals (group 2) record the highest positive abnormal returns. This leads us to conclude that

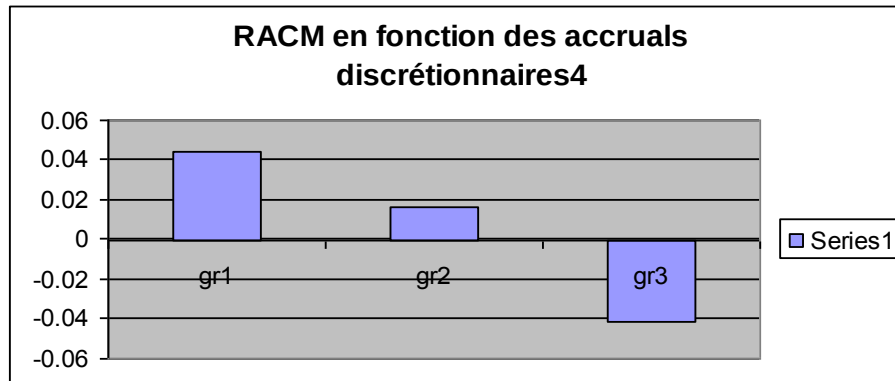
increase in discretionary accruals (in positive and negative terms) tends to set the obtained returns around the norm.

*Figure 7* : RACM in terms of discretionary accruals computed with model (7)

With reference to the results given by model 7, we can conclude that the obtained returns deviate from the norm if the firm manages to the upward its earnings,

since earnings management to the downward (group 3) may only lead to a slight deviation between obtained returns and estimated ones.

Figure 8 : RACM in terms of discretionary accruals computed with model (4)



Finally, we can conclude that firms with high discretionary accruals have positive average cumulative abnormal returns as indicated by all models (4, 5, 6, and 7). The second category of firms has a negative average cumulative abnormal return for model 7 and positive for models 4, 5, and 6. The last category has a negative average cumulative abnormal return for all models 4, 5, 6, and 7. This leads us to conclude that firms adopting a manipulative behaviour measured by high positive or negative discretionary accruals have a positive (negative) abnormal return during publication of their earnings.

As a summary, Tunisian managers may adopt an accounting policy allowing for hiding weaknesses in their management by influencing investors' behaviour on the stock market and by increasing the difference between real stock profits and those which could be achieved if no manipulated information has been provided. Indeed, discretionary accruals behaviour adopted by managers of firms listed on the Stock Exchange of Tunis leads to returns, unusually amplified, associated with earnings announcement.

This enabled us to notice that investors within the Stock exchange of Tunis, unable to seize the effects of changing accounting methods on earnings, may be easily trapped by managers who adopt an earnings management policy allowing them to cover the firm's bad performance and financial difficulties. If the firm is in difficulty, the manager tends to manage profits to the upward and consequently investors over-evaluate stocks and returns obtained following earnings announcement will be superior to those generally observed. However, if the firm is performing well, the manager tends to manage profits to the downward in order to minimise tax value and consequently investors under-evaluate stocks. At the time of earnings announcement, returns will decrease from their usual level.

## VI. CONCLUSION

Our answered two questions on the impact of earnings management on stock prices for Tunisian

firms, applying four models of accruals estimation. According to (Healy and Wahlen(1999); Young(2011), earnings management intervenes once managers use their discretion in accounts and in structuring in view of altering financial results either to fool third parties on the firm's real economic performance or to influence accounting figures. Accounting literature presented several models in which these practices report to rational equilibrium behaviour.

Studying the Stock Exchange of Tunis, we showed in our first empirical section that Tunisian firms adopt earnings management behaviour measured by discretionary accruals. In this study, we notice that large firms have in average negative discretionary accruals, using the results given by the four models. *Rafournier (1990)* insists that large firms prefer reducing their earnings, because governments focus closely on their profits to finance the state budget by leveraging higher taxes. Taking into account sector effect, we noticed different results as given by the four models. Generally speaking, firms belonging to highly-concentrated sectors (leasing and agro-food) prefer results-diminishing methods.

In the second empirical section, we showed that firms adopting earnings management measured by discretionary accruals have positive or negative discretionary accruals or positive (negative) abnormal returns during results publication. These results enabled us to conclude that earnings management is a practice adopted by Tunisian firms to influence investors' perception of the firm's future returns and to provide them unexpected market results superior to their expectations.

Indeed, Tunisian managers may adopt an accounting policy which allows for hiding their management practices. This is related to their influence on investors' behaviour and on the market, by increasing the gap between real stock returns and that which could have been achieved in case no manipulated information was declared. Accordingly, we notice that investors of Tunis Stock Exchange, unable to seize the effects of changing accounting methods on

firm results, may be easily trapped by managers who adopt a policy of earnings management.

These results which contradict those of Nikbakht and al (2009) give more credit to conclusions made by Kang and al (2010) and Young (2012). We might explain such conclusions by the fact that large firms which attract government's interest and analysts tend to cover the firm's poor performance and financial difficulties. Then, for these firms, managers tend to upwardly manage earnings and consequently investors over-evaluate corresponding stock and returns achieved following earnings publication tend to be superior to those observed. However, if the firm is performing well, managers, tend to manage earnings to the downward in view of reducing income tax value and consequently investors under-evaluate the stock. Moreover, at the moment of publishing earnings, returns decrease from their usual level (Rouen and al2012).

It is worth noting that studying earnings is a controversial subject (Courteau and al 2011). Our contribution relates to substitution variables used while empirically validating theoretical assumptions. Our conclusions, though, should be interpreted with caution. Size used to define political costs may represent many other influences. Some variables are studied through a binomial logistic regression technique. Moreover, used methodologies miss to take into account interactions between independent variables. However, these interactions are ignored by multivariate techniques which intuitively process weight of the different independent variables.

This study may serve as a preamble to exploring new research venues mainly on the effect of investors' institutional participation on Tunisian managers' behaviour and their effects on the market. Then, in front of earnings management practices, rating organisms and public authorities should think about the opportunity of an astute regulation that limit such behaviour. Other studies may test the relationship between earnings management and long-term performance after having identified the explanatory factors of this behaviour.

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