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Relationship between Specific Accruals and Disclosed Accounting Results of Companies in Financial Failure

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RELATIONSHIPBETWEENSPECIFICACCRUALSANDDISCLOSEDACCOUNTINGRESULTSOFCOMPANIESINFINANCIALFAILURE

Strictly as per the compliance and regulations of:

Relationship between Specific Accruals and Disclosed Accounting Results of Companies in Financial Failure

Kamel Fekiri α & Ezzeddine Abaoub σ

Abstract- The display of net counter-performance (explained by the existence and persistence of negative accruals) can help leaders to convince partners of the need to renegotiate contracts. The importance of the measurement of the earnings management lies, for the most part, in the suspicion of undervaluation of debts and losses. This suspicion is so persistent that this risk of undervaluation must be taken into account in the valuation of any business. Nevertheless, we have tried through this article to test the approach of the models of specific accruals in order to identify them and to measure their impacts on the modification of the published result. Indeed, three models were tested, that is, that of receivables, inventories and amortization and provisions, which allowed us to validate the hypothesis according to which the managers of financially failing companies tend to exploit the Discretionary Accruals in an upward management goal to circumvent the costs of financial distress and change the perception of risk by its partners, especially donors. Based on this approach by the specific accruals, we have developed the model (4) which incorporates the specific discretionary accruals as explanatory variables of the formation of the published net result.

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I. Introduction

The informative content of the accounting figures has always been the traditional toolfor the evaluation of the financial situation of the company especially when it comes to granting loans, creditors require, through restrictive clauses in debt contracts, compliance with certain ratios (liquidity ratio or solvency ratio ...) to protect against any form of wealth transfer from the firm to the shareholders (K.V. Peasnell, P.F. Pope and S. Young, 2000). In this aspect, debt contracts have prompted researchers to ask about the the effectiveness in reducing conflicts of interest between shareholders, creditors and managers (Joseph Gerakos, 2012), it is obvious that in the face of pressure Restrictive clauses, managers use the maneuvers given to them by the accounting standards and therefore they manage the results in order to avoid the violation of these restrictive clauses that would be costly in the opposite case. It is therefore interesting to study the earnings management in a particular context of debt (Hawariah Dalnial et al., 2014). Indeed, most of the research on this subject has been conducted in an Anglo-American socio-economic framework and few of them have been interested in the Euro-continent or in emerging countries such as Tunisia. Nevertheless, despite the fact that Tunisia had a new accounting system in 1997, breaking with the French model and aligning with the Anglo-American model, it remained strongly influenced by the Euro-continental socio-economic framework. in other words, on the one hand, accounting practices remain attached to the tax rules, despite the fact that accounting has been empowered by the enactment of the accounting law on companies, and the financing of companies still remains attached to bank loans (especially national banks such as BNA, STB, BH). On the other hand, it is unlikely, even if the current trend of the Tunisian state aims to give greater priority to local and foreign investors especially, that the financing method of Tunisian firms will be similar to that of Anglo-American firms as long as the shareholding culture is not widespread in the public and share ownership remains family-based in most companies in today's market. In this context, the socio-economic context of the Tunisia's case makes it perfectly legitimate and well-argued to study the earnings management in a context of in debtedness, especially since the leaders have an interest in benefiting from the continuity of the support. Credit institutions, to avoid increasing the cost of capital, they would be encouraged to manage profits upward (Mark Myring, 2006). In this regard, an abundant literature has developed to explain the motivations and incentives for managing the result (Patricia M. Dechow, Amy P. Sweeney, Richard G. Sloan, 1995). A large number of testable hypotheses have been developed by researchers based on contractual theories (Watts and Zimmerman, 1983), The validation of this approach is based on the assumption that it is possible to measure the earnings management. Compared to the existing literature on this subject (Xiaoan Cheng, 2012), we present in a first time the three models constructed on three discretionary accruals to measure «earning management". In a second time we adopt the approach of specific discretionary accruals by testing the empirical

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validity of three specific discretionary adjustment measurement models (applied to receivables, inventories and amortization and impairment provisions Assets) applied to a sample of Tunisian companies listed on the Tunis Stock Exchange over the period 1998-2014. Then we used the residuals of these three estimates as explanatory variables of the earnings management and check them.

II. Informative Content of Discretionary Accruals: Empirical Validation on A Sample of Tunisian Companies

Accruals-based models are today the most adopted methodology for measuring results management. The purpose of this section is to detect the practices of earnings management by using a modelization based on the specific accruals, making it possible to measure the discretionary component specific to each of the accounting variables constituting the accruals. Our results confirm that, in the Tunisian context, the change in inventory and receivables play a major role, along with depreciation and impairment provisions for assets, in the earnings management process. The predominant weight of the change in customer receivables and inventories is mainly due to the variability of working capital requirements.

Our study will focus on a sample of 19 companies listed on the Tunis Stock Exchange (BVMT) and over a period of sixteen years (1999-2014). The selection of our sample was made on the basis of two criterias:

- A listing period of at least 17 years over the period 1998-2014 on the Tunis Stock Exchange;
- A set of financial information such as income statements and balance sheet are available in the database that has been collected.

To conduct our empirical study, we adopted the approach based on specific discretionary accruals to assess the earning management in the selected sample. Indeed, based on Jones' models and especially the generalized modified Jones model, regression derived models have been proposed to calculate the specific discretionary adjustments of the accounting variables as being the residual resulting from the estimation of each component of the specific accruals.

In this case, the discretion of the leader varies according to whether he or she is interested in any of the components of the accruals. From this perspective, we constructed three regression models to estimate:

- *First Model*

This model expresses the change in the receivables according to the change in turnoverfor the same period.

$$\Delta Cr_{it} = \lambda_1 + \lambda_2 \Delta CA_{it} + \varepsilon_{1it} \quad (1)$$

With:

ΔCr_{it} = The variation of the customer item of the company i to the period t;

ΔCA_{it} = The change in turnover of company i at period t;

ε_{it} = The residual that corresponds to the discretionary accruals for the client item.

- *Second Model*

This model expresses the change in inventories according to the turnover of the same period.

$$\Delta ST_{it} = \alpha_1 + \alpha_2 \Delta CA_{it} + \varepsilon_{2it} \quad (2)$$

With:

ΔST_{it} =The change in the company's inventories item i to period t;

ε_{it} =The residual corresponding to the discretionary accruals relating to the inventory item.

- *Third Model*

This model expresses the change in depreciation and impairment provisions for assets based on the value of fixed assets and sales for the same period.

$$\Delta D°APDA_{it} = \delta_1 + \delta_2 IMMO_{it} + \delta_3 CA_{it} + \varepsilon_{3it} \quad (3)$$

With:

$\Delta D°APDA_{it}$=The change in amortization and provisions for depreciation of the assets of company i at period t;

$IMMO_{it}$ =The value of the total capital assets of enterprise i at period t;

ε_{it} =The residual corresponding to the discretionary adjustments relating to the item depreciation allowances and provisions for depreciation of the assets of company i at period t.

The estimation of these three models allows us to reconstruct Total Discretionary Accruals (DTA) by summing the three types of specific discretionary Accruals as follows:

$$ACD_{it} = \sum_{j=1}^{j=3} \varepsilon_{j,it} \quad (4)$$

This approach allowed us to identify the specific discretionary accruals relating to customer accounts, inventory, amortization and asset write-down provisions, respectively, as a significant source of managerial discretionary adjustments to manage net income (especially to cash and cash equivalents rise). Another objective has been achieved thanks to this approach, namely that of distinguishing the companies in the sample that manage the result from the abnormal increase of those that have discretionarily manipulated the result downwards, which will constitute a procedure prior to the constitution of a sample of audit firms with respect to the financial default criteria. All the more we have managed to note the extent of the discretionary manipulations in terms of observations (without taking into account the identity of the company) and also in terms of the identification of the manipulative firm of the discretionary accounting variables.

a) *Estimation of the model of specific accruals: Customer receivables*

$$\Delta Cr_{it} = \lambda_1 + \lambda_2 \Delta CA_{it} + \varepsilon_{1it} \quad (5)$$

This model expresses the change in the receivables according to the change in turnover for the same period. The regression results of the model are formulated in Table 1.

i. *Interpretation of the Significance of the Model (1)*

The significance of the model (1) is analyzed in relation to the significance of the coefficients of the regression and by the Fisher statistic expressed as a function of the coefficient of determination R^2. At the level of the estimation of the coefficients, one notes that it is very significant with the risk of 1% and consequently the exogenous variable conveys well the explanations on the endogenous variable and the constant is significant with the risk of 10%.

ii. *Variance analysis table: statistical inference1- Overall significance test of the model (1)*

To answer this question, we extend the study of the variance decomposition by integrating the dl2 (degree of freedom) in the analysis table of the variance. Indeed, the coefficient of determination R^2 is not a good indicator of the regression's significance since it has the disadvantage of getting close to the unit in whenever the number of exogenous increases, it indicates also the proportion of variance of the endogenous $y = \Delta Cr_{it}$ explained by the model.

We have:

$$SCT = \sum_{i=1}^{n}(y_{it} - \bar{y})^2 \; ; \; SCE = \sum_{i=1}^{n}(\hat{y}_{it} - \bar{y})^2 \quad et \quad SCR = \sum_{i=1}^{n}(y_{it} - \hat{y}_{it})^2 \quad (6)$$

It is easy to demonstrate that:

$$SCT = SCE + SCR \quad (7)$$

And,

$$R^2 = {SCE}/{SCT} = 1 - {SCR}/{SCT} \quad (8)$$

The ordinary least squares principle is to have $SCR = 0$, for a perfect model.

For other models (other than perfect) what is a meaningful model?

Or from what value of the SCR can we say that the regression is bad?

In the econometric literature (Applied regression analysis - 2nd edition Yadolah Dodge, Valentin Rousson - Dunod edition) it is a question of comparing the value of the SCR with a reference value to answer the previous question. Indeed, the decomposition of the variance (equation 2-27) is extended to the notion of mean squares as shown in the following table 2:

The coefficient of determination indicated, as previously reported, the proportion of variance of the endogen ΔCr_{it} explained by the model. However, he does not answer the question: is the regression globally significant or not? Or does the exogenous one ΔCA_{it} (variation of the turnover between t and t-1) lead significantly to the information on the variation of the receivables ΔCr_{it}? Representative of a real linear relation in the population studied. In the econometric literature (Francophone), the fact of considering the significance of a linear model studied, through the coefficient of determination R^2 is only one point of view. Indeed, we find another point of view (Anglo-Saxon) more reticent vis-à-vis the first since this indicator is not a parameter of the population estimated on the sample3. The null hypothesis relating to the test of global significance of the model would therefore be:

H0: Absence of linear connection between the endogenous and the exogenous.

To test this global significance of the model (1), we use the F-statistic, which is a statistic to test theequality of two variances and is defined as follows:

$$F - statistic = \frac{CME}{CMR} \; ?$$

Where we define the mean square CM, as being the sum of squared deviations related to its degree of freedom,

$$F - statistic = \frac{SCE}{1} \Big/ \frac{SCR}{n-2} = \frac{SCE}{SCR}(n-2)$$

Here $n = 304$ the number of observations

The interpretation of this statistic would indicate whether the explained variance is significantly higher than the residual variance. According to Bourbonnais, the model is significant when the explained variance is significantly greater than the residual variance. In Table 2, the calculation of this statistic is explained and its value (12.15267) is obtained using the Excel spreadsheet which is almost the value (12.13761) provided by the results of the EViews regression (table 1). We express this statistic according to the coefficient of determination we obtain:

$$F - statistic = {SCE}/{SCR}$$

and

$$R^2 = {SCE}/{SCT} \quad et \; R^2 = 1 - \frac{SCR}{SCT}$$

1 In statistical inference, it is desired to estimate population parameters using observed sample data.
2 The most accessible definition is to understand them as the number of terms involved in the sums (the number of observations)minus the number of parameters estimated in that sum.(df).

From where, we can write:

$$F - statistic = \frac{R^2}{(1-R^2)}(n-2) = \frac{\frac{R^2}{1}}{\frac{(1-R^2)}{n-2}}$$

$SCE = R^2$ is distributed according to a law $\chi^2(n-2)$ $at\ (n-2)$ to a degree of freedom.

And $F - statistics \equiv \frac{\frac{\chi^2(1)}{1}}{\frac{\chi^2(n-2)}{n-2}} \equiv \mathcal{F}(1, n-2)$

F is distributed (under the hypothesis H0) according to a Fisher law at (1, n-2) degree of freedom.

The critical region of the Fisher test, corresponding to the rejection of H0, at the risk of α is defined for the abnormally high values of F, in other words.

$F > F_{1-\alpha}(1, n-2)$ The decision is made on the basis of the p-value = α' and is provided directly by the econometrics software.

For our model (1) Excel obtained almost the same results for this Fisher test.

Indeed, the table 2 gives the results obtained under Excel, for the Fisher statistic,

we obtain: F = 12.15267 ;les ddl=(2,302); $F_{0.95}(0.5, 2, 302)$ = 3,87233 ;

And $p - value = \alpha' = 0.0005628 < 5\%$.

Then,

$F = 12.15267 > F_{0.95}(0.5, 1, 302)$ =3,87233.

The conclusion is that the model (1) is globally significant at the risk of 5%. All the more, these results are provided almost identically by the table 1 generated by EViews software.

iii. *Test of significance of the model regression parameters (1)*

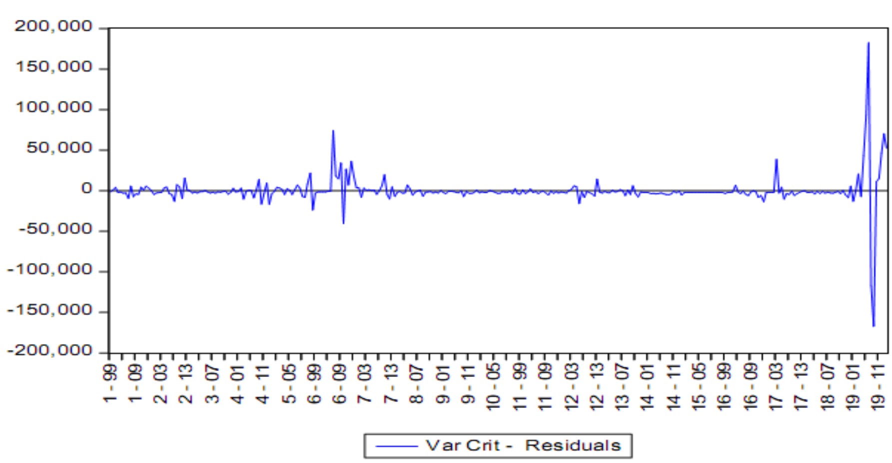
The tests relating to the individual significance of the estimated parameters of the regression are verified.

iv. *Residue Interpretation of the Estimation Model (1)*

The residual of the estimation corresponds to the discretionary manipulations relating to the accounting variable of the Receivables. It seems to be of a rather important scale (the R^2 is relatively weak 3.9%). Therefore, we consider, based on the results of the estimation of the model of specific accruals (1), that the earnings management through the turnover is normal up to 3.9% considering the turnover as the only explanatory variable needed. However, the existence of other discretionary accruals, whether they are normal or abnormal, suggests that an explanation of outcome management can be provided by the study of other specific accruals.

Tests enabled us to verify the distribution of the residue according to the standard normal distribution (graph. 1). Therefore, the studied sample induces well the properties of the population studied in terms of mean and variance, $\varepsilon_i \equiv N(0, \delta_\varepsilon^2)$

To better understand the role of discretionary accruals managed through turnover in order to modify the receivables that themselves affect the published net result, we have made a classification of companies (through observations) according to the direction of variation of average residues observed at each company. The results of this approach have been summarized in Table 3.



Graph 1. Residual of the model estimation (1) $\Delta Cr_{it} = \lambda_1 + \lambda_2 \Delta CA_{it} + \varepsilon_{1it}$

3 D. Garson, Multiple Regression, http://faculty.chass.ncsu.edu/garson/PA765/regress.htm#significance _ "...The F test is used to test the significance of R, which is the same as testing the significance of R2, which is the same as testing the significance of the regression model as a whole... ; ouencore D. Mc Lane, Hyper Stat Online Contents, http://davidmlane.com/hyperstat/B142546.html _ ...The following formula (le test F) is used to test whether an R2 calculated in a sample is significantly different from zero...

This classification (Table 6) shows that of the 304 observations in the sample, there are 144 (47.37%) relative observations, in terms of average, having negative residues and 160 (52.63%) other observations, have positive residues (total observations 304 and overall average of residues being zero: 4.75E-17). In other words, the 160 observations are related to discretionary turnover manipulations towards the rise of this one, this is corroborated by the work of Peasnell, PF Pope and S. Young, (2000) who consider the manipulation of turnover (by increasing it) in exchange for an increase in receivables constitutes a form of specific earnings management. The model (1) for measuring discretionary management at the level of specific accruals receivables is significant.

b) Estimation of the model of specific accruals: Stocks

The model to estimate is as follows:

$$\Delta ST_{it} = \alpha_1 + \alpha_2 \Delta CA_{it} + \varepsilon_{2it} \qquad (2)$$

With,

ΔST_{it} = The change in the company's inventories item i to period t;

ε_{it} = The residual corresponding to the discretionary adjustments relating to the inventory item.

This model expresses the change in inventories according to the turnover of the same period. The table 4 displays the results of the simple linear regression of the model (2), which show that the exogenous variable ΔCA_{it} is positively correlated to the endogenous ΔST_{it} ΔST α = 0. 051 63 3) with p-value =0%, in other words, the regression coefficient for this variable is very significant. The constant is also positively correlated to the endogenous variable and is significant with the risk of 0.35% (p-value of Student = 0.0035).

i. *Interpretation of the Significance of the Model (2)*

The interpretation of the significance of the model will be treated in the same way as with the model (1), in other words we will use the Fisher statistic expressed as a function of the coefficient of determination R^2. Indeed, the analysis table of variance integrating the average squares as seen previously, allows us to better appreciate the significance of the model by comparing the value of the SCE sum with that of SCR standardized respectively by their respective degrees of freedom. Table (2- 12) summarizes the results of this analysis:

$$\text{F-statistic} = \frac{R^2}{(1-R^2)}(n-2) = \frac{\frac{R^2}{1}}{\frac{(1-R^2)}{n-2}} = 147.0997$$

The same result is obtained, ie the null hypothesis is rejected and therefore.

The model (2) is globally significant at the risk of 5%: the explained variance is clearly greater than the residual one.

ii. *Residue Interpretation of the Estimation Model (2)*

The residual of the estimation corresponds to the discretionary manipulation of the accounting variable "Stock", it seems to be of a rather important significance too. Like the variable "Accounts receivable", inventories have been subject to a very large discretionary manipulation (since the coefficient of determination R2 = 32.75% is relatively low). However, we must consider that in this model as in the previous one, the endogenous is explained by a single explanatory variable, which despite its significance, remains insufficient to convey all the information on the variability of the endogenous.

The specification of the residual's variation makes it possible to identify the discretionary manipulations that tend to increase the accounting variable "Stock" of those that tend to minimize it. Indeed, in a context of financial difficulty, managers tend to manage their results upward.

The results of the residue quality tests (graph 2-3 and table 2-13) illustrate the normality of this residue.

The classification of enterprises according to the sign of discretionary accruals is given in Table (2-14),which shows that out of the 304 observations collected, 166 (or 55%) are relative to means of discretionary accruals of positive sign, in other words, discretionary manipulations tend to increase the value of inventories upwards, against 138 (or 45%) other observations relating to means of discretionary accruals of negative sign. These findings align perfectly with the postulates of the positive theory of accounting (Watts and Zimmerman, 1986, 1990). Indeed, in this logic, the leaders of financially failing companies instrumentalised the accounting in an objective of concealment (fraud) of these difficulties. As a result we will consider that the model (2) for measuring discretionary management at the level of the specific accruals "Stocks" is also significant, like the previous model of specific accruals (1).

To conclude this empirical study on the specific accruals, we start a third and fourth regressions, those of the model (3) relating to the specific accruals "Depreciation and provisions for depreciation of assets" whose their significant results and regression coefficients are provided by the table 9, and the model (4) relating to the relationship between published net income and discretionary accruals formulated by model estimation residuals (2- 22), (2) and (3). Our last regression is of the equation (4):

$$RN_{it} = \gamma_0 + \gamma_1 \Delta St_{it} + \gamma_2 \Delta Cr_{it} + \gamma_3 \Delta D°APDA_{it} + \sum_{j=1}^{3} \varepsilon_{it\,j} + \theta_{it} \quad (4)$$

c) Estimation of the Model of Specific Accruals: Depreciation Allowances and Provisions for Impairment of Assets

The model to estimate:

$$\Delta D°APDA_{it} = \delta_1 + \delta_2 IMMO_{it} + \delta_3 CA_{it} + \varepsilon_{3it} \quad (3)$$

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$\Delta D°APDA_{it}$ = Amortization and depreciation allowance for the company's assets i at period t.
$IMMO_{it}$ = The change in turnover of the company i to period t.
ΔCA_{it} = The change in turnover of the company i to period t.
ε_{it} = The residuals of the estimate corresponding to the discretionary adjustments relating to depreciation and impairment provisions of the company's assets i at period t.

This model expresses the change in depreciation and provisions (endogenous) based on both fixed assets and sales (exogenous) for the period.

i. *The Model Estimation Results (3)*

The results of the estimation model (3) are formulated in Table 9, where we find that the exogenous variable *IMMOit* is very significant with a t-Student = 6.602014 (p-value = 0.000). However, the constant and the other exogenous (Δ*CAit*) are not significant. There is also a weak explanatory power of the model (3), which is due to the existence of other explanatory exogenous ones not included in the model. However, the model remains globally significant because of the F-statistic (21.79471) which means that the explained variance is significantly higher than the residual variance.

Indeed Fisher's statistic is equal to:

$$F = \frac{R/p}{(1-R^2)/(n-p-1)} = 21.79477174$$

ii. *Residue Interpretation of the Estimation Model (3)*

At the level of the residual's estimation, which corresponds to the discretionary part of the accounting manipulations of the variable, we proceed as with other models of specific accruals (2-22 and 2-23), in other words we analyze its impact through the sign. The classification of observations by firm and following the sign of the mean of the residual terms is given in Table 5. These results reveal that 172 observations (57%) relate to discretionary positive sign adjustments versus 132 (43%) negative sign observations. In other words, the negative discretionary manipulations contribute to the decrease of the accounting variable and consequently to the abnormal increase of the net 11 results, unlike the other positive discretionary manipulations which contribute to the increase of the amortizations and the provisions for depreciation of the assets and consequently the downward management of the net results displayed.

In summary, these three empirical studies conducted through specific accruals, have highlighted the individual importance of each of the three specific accruals (Cr_{it}; St_{it}; $D°APDA_{it}$) on the earnings management which allowed us to appreciate the discretionary manipulations specific to the accounting headings subject to the adjustments of specific discretionary accruals (Table 5). Indeed,we formulate the synthesis of the magnitude of specific accruals in the following table 6:

The table 6 highlights the managers' choice focused on the "sales" specific accruals as the preferred target of discretionary adjustments to manage the accounting result towards the abnormal increase with an observation rate (estimated residual) reaching 55%, then the second target that relating to the item "trade receivables" with a rate of observation of residues (positive discretionary accruals) of 53% and finally the item "depreciation and provisions for depreciation of assets" with a rate of 43%. It seems that companies in financial difficulty (positive discretionary accruals) use these three accounting headings to conduct their policy of handling the accounting result in order to hide their financial failure.

iii. *Model Estimation of Specific Accruals (4)*

Finally, to estimate the relationship between the formulation of the net result and the residual that explains one of the three linear regressions realized (1), (2) and (3), we built the model (4):

$$RN_{it} = \gamma_0 + \gamma_1 \Delta St_{it} + \gamma_2 \Delta Cr_{it} + \gamma_3 \Delta D°APDA_{it} + \sum_{j=1}^{3} \varepsilon_{it\,j} + \theta_{it} \quad (4)$$

This last regression of the equation (4) lets us testing whether the specific discretionary accruals $\varepsilon_{it\,j}$ conveyed information about the published net result? (the endogenous variable to explain RN_{it})

with,

RN_{it} = the net result of company i at year t;
ΔSt_{it} = the change in inventories from company i to year t ;
ΔCr_{it} = the change in the receivables from company i to year t ;
$\Delta D°APDA_{it}$ = the change in amortization and provisions for depreciation of assets of enterprise i to year t;
$\varepsilon_{it\,j}$[4] = the residue of the model estimate of specific accruals (1), (2) and (3) ;
θ_{it} = the residue of the estimate of equation (4).

Before beginning the regression of equation (4), we carried out a correlation test between these explanatory variables and the endogenous variable whose results are given by the table 7.

- The accounting variable "customer receivable" is perfectly correlated with "turnover" (pvalue = 0.0006), therefore, it is maintained in the model (4) ;
- The accounting variable "stock" is positively correlated with "net profit" (p-value = 0.000) and also correlates to "turnover" (p-value = 0.000) and "trade receivables" (p-value = 0.090)
- The accounting variable "amortization and provisions for depreciation of assets" is highly negatively correlated (p-value = 0.050) to "net

4 Specific discretionary accruals ($\varepsilon_{it\,j}$) conveyed information on the published net result (the endogenous variable to be explained RN_{it}).

income" and "trade receivables" (p-value =0.092) and is highly correlated positively with "Stocks" (p-value = 0.000);

- The variable "Tangible fixed assets", its correlation with the variable "net result" is not significant. On the other hand, it is perfectly correlated with "depreciation and provisions";
- The discretionary accruals ($\varepsilon_{it\ j=1}$) of the "accounts receivable" item, their correlation with the "net result", are low, but perfectly correlated with the "receivables", "depreciation and provisions" items with respectively (p -value = 0.000 and p-value = 0.087);
- The discretionary accruals ($\varepsilon_{it\ j=2}$) of the "inventories" item are perfectly correlated with the "net result", (p-value = 0.029), and also with the items "inventories" and "depreciation and provisions", (p-value = 0.000 and p-value = 0.0001);
- Finally, the discretionary accruals ($\varepsilon_{it\ j=3}$) of the "amortization and provisions" item are correlated with the "net result" (p-value = 0.025), as well as with the "inventories" items, (p - value = 0.0001), "amortization and provisions", (p-value = 0.000).

The regression results of the model (4) showed important significance for each of the explanatory variables of the model as well as an overall significance through the Fisher statistic as shown in the following table 8:

The low explanatory power of the model (R^2 = 15.23%) is explained by the fact that there are other explanatory variables not incorporated in the model in question, since the objective of this chapter is devoted to the study of the informative content of discretionary accruals in the formation of the net result as well as their identification in the headings most suspected of being handled discreetly, namely those of the current assets (receivables, inventories, provisions for depreciation of the assets) and calculated expenses (the allocations depreciation of property, plant and equipment).

III. Conclusion

In this article, we have tried to expose a different method of measurement of the earning management based on specifics discretionary accruals. The first research that looked at earnings management tried to explain the impact of choosing a particular accounting method, or even an entire accounting policy, on the published result. This approach, of course, does not reflect all of the accounting decisions made by managers. Indeed, Healy (1985) proposed the notion of accruals as a more comprehensive variable serving as a basis for the evaluation of earnings management. Also called Adjustment of Total Regularization Accounting Variables: AVCRT, accruals are defined as the difference between accrual accounting and cash accounting. The accounting adjustments consist mainly of the income and expenses taken into account in the determination of the result and which did not give rise to any cash flow during the year.These are calculated expenses and income (such as amortization and provisions and reversals of provisions for depreciation of assets, or charges) and offsetting charges and income (such as the components of the change in need for funds). To account for these elements, the managers have certain latitude because of the flexibility of their registration. Several studies (DeAngelo 1994, J. Jones 1991, Dichev and Skinner 2001, Beneish et al., 2002, Andreas and Neophitos 2003) have shown that predictions show that executives make accounting choices to improve the reported outcome. Either to maintain their position, to avoid the controls of capital providers, regulatory bodies or guardianship. As they can also increase the result to avoid breaching contractual clauses related to indebtedness. However, displaying net counter-performance (explained by the existence and persistence of negative accruals) can help leaders to convince partners of the need to renegotiate contracts. The importance of the measurement of the earnings management lies, for the most part, in the suspicion of undervaluation of debts and losses. This suspicion is so persistent that this risk of undervaluation must be taken into account in the valuation of any business. Nevertheless, we have tried through this article to test the approach of the models of specific accruals in order to identify them and to measure their impacts on the modification of the published result. Indeed, three models were tested, that is, that of receivables, inventories and amortization and provisions, which allowed us to validate the hypothesis according to which the managers of financially failing companies tend to exploit the Discretionary Accounting headings in an upward management goal to circumvent the costs of financial distress and change the perception of risk by its partners, especially donors. Thanks to this approach of the specific accruals, we have developed the model (4) which incorporates the specific discretionary accruals as explanatory variables of the formation of the published net result. Indeed, the purpose of this article is devoted to the study of the informative content of the discretionary accruals in the formation of the net result as well as their identification in the headings most suspected of being handled discreetly namely those of the current assets (receivables, inventories, provisions for depreciation of assets) and calculated expenses (amortization of property, plant and equipment). Hence the research perspective is to explain the existence and measurement of discretionary accruals in a context of financial difficulty and leave the question of the relationship between earning management through discretionary accruals and the beginning of Fraud that for a future research in the framework of Fraud investigation in published financial statements in the case of Tunisia.

Table 1: Model and coefficient significance tests - equation (1)

Variable /	Coefficient	Std. Error	t-Statistic	Prob.
ΔCA_{it} / λ_2	0.050167	0.014400	3.483907	0.0006
c / λ_1	2151.691	1139.342	1.888538	0.0599
	Effects Specification			
			S.D.	Rho
Cross-section random			0.000000	0.0000
Period random			555.2315	0.0008
Idiosyncratic random			19679.20	0.9992
	Weighted Statistics			
R-squared	0.038638	Mean dependent var		2597.040
Adjusted R-squared	0.035455	S.D. dependent var		19937.48
S.E. of regression	19580.85	Sum squared resid		1.16E+11
F-statistic	12.13761	Durbin-Watson stat		1.635335
Prob(F-statistic)	0.000567			
	Unweighted Statistics			
R-squared	0.038684	Mean dependent var		2616.606
Sum squared resid	1.16E+11	Durbin-Watson stat		1.635261

Table 2: Analysis of Variance and Overal Significance Test for Model Regression (1)

Average of the observations of the variable $endogenous\ y_i$	**Average of the observations of the variable** $endogenous\ \hat{y}i$	$SCT = \Sigma(yi - \bar{y})^2$	$SCR = \hat{\varepsilon}_i^2 = \Sigma(yi - \hat{y}i)^2$	$SCE = \Sigma(\hat{y}i - \bar{y})^2$	$R^2 = SCE/SCT$	
2 616,606	2 616,606	1,20536E+11	1,15874E+11	4662825407	0,038683964	
Source of variation	**R²**	**Sum of squares**	**dF**	**Middle squares**	**Values**	**Statistics F / p-value**
n = 304 et p = 2						$F = \frac{CME}{CMR} = \frac{SCE/p}{SCR/n-p-1}$
Explained	$\frac{SCE}{SCT} = 1 - \frac{SCR}{SCT}$ 0,038683964	$SCE = \Sigma(\hat{y}i - \bar{y})^2$	(n-1)-(n-2)=1	$CME = SCE / p$	4662825407	12,15267075 $LOI.F(0{,}05; 2; 302)$
residual		SCR = $\Sigma(yi - \hat{y}i)^2$	n-2 = 302	$CMR = SCR / (n-p-1)$	383687298,3	3,872331426 $Loi.F(12{,}1526; 2; 302)$
total		SCT = $\Sigma(yi - \bar{y})^2$	n-1 = 303	$CMT = SCT / (n-1)$	397809866,3	0,000562885

the null hypothesis is rejected

Table 3: Descriptive Statistics for RESID - Categorized by values of RESID $\hat{\varepsilon}_{3it}$ and Firm Ei - Sample: 1999 2014 - Included observations: 304 - model (3)

		Firm Ei										
		E1	E10	E12	E13	E14	E15	E16	E17	E18	E2	E20
Mean Std. Dev. Obs.	[-40000, -20000)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		0	0	0	0	0	0	0	0	0	0	0
	[-20000, 0)	-795.5694	-458.4749	-1001.986	-3447.675	-555.7624	-1178.486	-107.5209	-2029.013	-687.1659	-1996.525	-178.8747
		706.2862	518.2617	602.4165	2256.333	365.8127	1542.104	76.47686	3158.682	506.5501	3958.511	91.14907
		7	8	4	9	10	4	5	4	9	9	6
RESID	[0, 20000)	816.4079	1088.935	661.0786	2940.311	717.7467	476.6858	142.1608	1351.934	814.4274	2427.568	218.5030
		929.2523	1125.044	687.8307	3360.404	542.0661	668.4831	80.49171	2175.335	648.2781	2701.614	179.8872
		9	8	12	7	6	12	11	12	7	7	10
	[20000, 40000)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		0	0	0	0	0	0	0	0	0	0	0
	All	111.1678	315.2303	245.3125	-652.9314	-78.19647	62.89291	64.13530	506.6970	-30.21882	-60.98404	69.48633
		1158.522	1163.849	986.2484	4236.014	763.9979	1162.429	142.0049	2784.207	947.0142	4051.484	248.3189
		16	16	16	16	16	16	16	16	16	16	16
.		E21	E3	E4	E5	E6	E7	E8	E9	All		
	[-40000, -20000)	-26441.05	NA	NA	NA	NA	NA	NA	NA	-26441.05		
		3193.501	NA	NA	NA	NA	NA	NA	NA	3193.501		
		4	0	0	0	0	0	0	0	4		
	[-20000, 0)	-12362.52	-409.1217	-605.2635	-755.0942	-4129.520	-1644.819	-139.0901	-445.5380	-1505.263		
		6446.945	309.5502	702.9382	822.3769	3895.279	1153.254	126.6930	367.3906	2874.408		
		4	6	8	5	5	12	8	5	128		
RESID	[0, 20000)	11644.55	608.5911	507.3818	491.8308	2746.896	1227.294	321.2861	295.6256	1307.039		
		3752.054	354.9137	390.6918	652.3841	3336.818	397.5475	173.5385	264.0100	2609.982		
		6	10	8	11	10	4	8	11	169		
	[20000, 40000)	27654.71	NA	NA	NA	22238.83	NA	NA	NA	25849.42		
		8931.852	NA	NA	NA	NA	NA	NA	NA	7047.428		
		2	0	0	0	1	0	0	0	3		
	All	-1877.348	226.9488	-48.94086	102.1668	1816.262	-926.7903	91.09801	64.01195	-5.61E-14		
		20000.08	605.3540	794.9529	905.7581	7133.983	1629.952	279.3984	456.4512	5042.224		
		16	16	16	16	16	16	16	16	304		

Table 4: Significance tests of the model and the coefficients equation (2)

Variable / Coefficient	Coefficient	Std. Error	t-Statistic	Prob.
$\Delta CA_{it} / \alpha_2$	0.051633	0.009288	5.558891	0.0000
C / α_1	1982.709	672.7223	2.947291	0.0035
	Effects Specification			
R-squared	0.327544	Mean dependent var		2461.212
Adjusted R-squared	0.242549	S.D. dependent var		13366.28
S.E. of regression	11632.90	Akaike info criterion		21.66901
Sum squared resid	3.64E+10	Schwarz criterion		22.09696
Log likelihood	-3258.689	Hannan-Quinn criter.		21.84020
F-statistic	3.853703	Durbin-Watson stat		2.625300
Prob(F-statistic)	0.000000			

Table 5: Model Significance Tests (4) and Regression Coefficients

$$RN_{it} = \gamma_0 + \gamma_1 \Delta St_{it} + \gamma_2 \Delta Cr_{it} + \gamma_3 \Delta D°APDA_{it} + \sum_{j=1}^{3} \varepsilon_{it\ j} + \theta_{it}$$

N = 304

Variable	Coefficient	Std. Error	t-Statistic	Prob.
-1.028852	0.269235	-3.821391	0.0002	
VST_{it}	1.609605	0.259101	6.212271	0.0000
$\varepsilon_{it}\ j=1$	1.649126	0.500628	3.294116	0.0011
$\varepsilon_{it}\ j=2$	-1.200647	0.284649	-4.217999	0.0000
VCR_{it}	-1.700822	0.499477	-3.405209	0.0008
C	6049.328	1697.991	3.562638	0.0004
R-squared	0.152337	Mean dependent var	4842.737	
Adjusted R-squared	0.138115	S.D. dependent var	25863.00	
S.E. of regression	24010.63	Akaike info criterion	23.02992	
Sum squared resid	1.72E+11	Schwarz criterion	23.10328	
Log likelihood	-3494.548	Hannan-Quinn criter.	23.05927	
F-statistic	10.71099	Durbin-Watson stat	0.993234	
Prob(F-statistic)	0.000000			

Table 6: Model and coefficient significance tests - equation (3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMMO_IT	0.008570	0.001298	6.602014	0.0000
_CA_IT	0.000948	0.003720	0.254822	0.7990
C	-165.3899	319.9869	-0.516865	0.6056
R-squared	0.126497	Mean dependent var	697.6603	
Adjusted R-squared	0.120693	S.D. dependent var	5394.980	
S.E. of regression	5058.948	Akaike info criterion	19.90552	
Sum squared resid	7.70E+09	Schwarz criterion	19.94221	
Log likelihood	-3022.640	Hannan-Quinn criter.	19.92020	
F-statistic	21.79471	Durbin-Watson stat	1.769239	
Prob (F-statistic)	0.000000			

Table 7: Classification of the enterprises in the sample according to the direction of variation of the residue $\hat{\varepsilon}_{3it}$ equation (3)

Firm Ei	Number of observations of specific discretionary Accruals $\hat{\varepsilon}_{1it} = \Delta[\![Cr_{it}$		Number of observations of specific discretionary Accruals $\hat{\varepsilon}_{1it} = \Delta Cr_{it}$		Number of observations of Specific discretionary accruals $\hat{\varepsilon}$3it= ΔD°APDA it	
	Impact (-) on the result	Impact (+) on the result	Impact (-) on the result	Impact (+) on the result	Impact (+) on the result	Impact (-) on the result
E1	8	8	5	11	7	9
E10	7	9	7	9	8	8
E12	7	9	6	10	4	12
E13	6	10	6	10	9	7
E14	6	10	8	8	10	6
E15	7	9	9	7	4	12
E16	8	8	5	11	5	11
E17	6	10	9	7	4	12
E18	10	6	7	9	9	7
E2	8	8	8	8	9	7
E20	9	7	6	10	6	10
E21	7	9	8	8	8	8
E3	7	9	7	9	6	10
E4	7	9	8	8	8	8
E5	7	9	7	9	5	11
E6	10	6	11	5	5	11
E7	9	7	8	8	12	4
E8	7	9	6	10	8	8
E9	8	8	7	9	5	11
Total Observations by type of Accruals	144	160	138	166	132	172
Total Observations	304		304		304	
% by type of Accruals	47%	53%	45%	55%	43%	57%
Total %	100%		100%		100%	

Table 8: Spearman Correlation Test

Covariance Analysis: Spearman rank-order Sample: 1999 2014

Included observations: 304

Corrélation	RN_{it}	VCA_{i}	VCR_{it}	VST_{it}	$VD°APD$	$IMMO_{i}$	$\varepsilon_{it\ j}$	$\varepsilon_{it\ j=2}$	$\varepsilon_{it\ j=3}$
RN_{it}	1.000000								
VCA_{it}	0.075623	1.000000							
VCR_{it}	-0.016219	0.196682	1.000000						
VST_{it}	0.252547	0.401599	0.097334	1.000000					
$VD°APDA_{it}$	-0.112268	0.002866	0.096738	0.269183	1.000000				
$IMMO_{it}$	0.018114	-0.030543	0.204736	0.172803	0.355399	1.000000			
$\varepsilon_{it\ j=1}$	-0.031704	0.000113	0.980490	0.018757	0.098091	0.214938	1.000000		
$\varepsilon_{it\ j=2}$	0.124957	3.23E-16	-0.024785	0.820034	0.229936	0.076335	-0.025279	1.000000	
$_{it}\varepsilon_{j=3}$	0.128129	5.11E-16	0.022671	0.216326	0.934614	-5.15E-16	0.023122	0.216961	1.000000

t-Statistic	RN_{it}	VCA_{i}	VC	VS	$VD°A$	IM	ε	$\varepsilon_{it\ j=2}$	$\varepsilon_{it\ j=3}$
RN_{it}	-----								
VCA_{it}	1.31795	-----							
VCR_{it}	-0.28189	3.486069	-----						
VST^{it}	4.53583	7.620579	1.699550	-----					
$VD°APDA_{i}$	-1.96341	0.049805	1.689057	4.857182	-----				
$IMMO_{it}$	0.31483	-0.531029	3.634935	3.048857	6.607546	-----			
$\varepsilon_{it\ j=1}$	-0.551228	0.001971	86.68152	0.326025	1.712902	3.824623	-----		
$\varepsilon_{it\ j=2}$	2.188682	5.62E-15	-0.430856	24.90010	4.105880	1.330443	-0.439444	-----	
$_{i}\varepsilon_{j=3}$	-2.245152	8.88E-15	0.394077	3.850515	45.66634	-8.95E-15	0.401932	3.862383	-----

Probability	RN_{it}	VCA_{it}	VCR_{it}	VST_{it}	$VD°APDA_{it}$	$IMMO_{it}$	$\varepsilon_{it\ j=1}$	$\varepsilon_{it\ j=2}$	$\varepsilon_{it\ j=3}$
RN_{it}	-----								
VCA_{it}	0.1885	-----							
VCR_{it}	0.7782	0.0006 ***	-----						
VST_{it}	0.0000 ***	0.0000 ***	0.0902 *	-----					
$VD°APDA_{it}$	0.0505 **	0.9603	0.0922 *	0.0000 ***	-----				
$IMMO_{it}$	0.7531	0.5958	0.0003 ***	0.0025 ***	0.0000 ***	-----			
$\varepsilon_{it\ j=1}$	0.5819	0.9984	0.0000 ***	0.7446	0.0878 *	0.0002 ***	-----		
$\varepsilon_{it\ j=2}$	0.0294 **	1.0000	0.6669	0.0000 ***	0.0001 ***	0.1844	0.6607	-----	
$\varepsilon_{it\ j=3}$	0.0255 **	1.0000	0.6938	0.0001 ***	0.0000 ***	1.0000	0.6880	0.0001 ***	-----

***: significant at 1% - **: significant at 5% - *: significant at 10%

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