

Abnormal accounting accruals Management by market disciplinary approach: Evidence in Tunisian banks before and after the Arab Revolution

Mohamed Sadok GASSOUMA¹

ESCTRA LABO, University Of Carthage, IHEC, Tunisia

Abstract

This paper tests the-effect of governance factor related to the shareholder ownership and to the auditor's characteristic on the abnormal accounting accruals in Tunisian banks.

The aim of this study is to estimate the abnormal accruals drawing on the classical Kothari et al (2005) model to demonstrate their progress before and after Tunisian revolution. Indeed, through the difference-in-difference approach, "DID," this paper attempts to deduct the disciplinary factors that contribute to follow up these accruals using a linear regression model.

The results show that the accounting manipulation and net income smoothing in Tunisian banks worsened after the Tunisian revolution, contrary to what was expected. This aggravation is shown by the "DID" approach that was the result of the market discipline deterioration played by the majority of shareholders, the external auditors and the supervisory board. The overrun shareholders ownership in Tunisian banks have caused an interest collision between them and the managers. The latter in turn, made collisions with the external auditors through rewards for a long period.

1. Introduction

The foundation of accounting manipulations is based on the agency and signal theory. In fact, the different players in the market do not have the same quality of information about the bank prospects. However, the signal theory related to information asymmetry assumes that the managers disclose only information that will help them to change the investors' minds by trying to show them the good side of the bank's financial situation. From where, they earn their confidence and obtain funding with good conditions. (Ross and al, 1969). The accounting manipulation in this context has just signaled some information specific to users in general and in particular investors on the future performance and future prospects of their bank.

The so-called agency theory of Jensen and Meckling (1976), under the assumption of information asymmetry is defined as a contract by which many use the services of another person to achieve on their behalf any task, resulting decision-making delegation. This assumption states that this decision-making delegation may lead to shareholders' and managers' conflicts as well as to shareholders-creditors' conflicts.

However, Dye (1988) emphasizes that the accounting manipulation is the consequence of a situation where executives' benefit from asymmetric information vis-à-vis shareholders. The managers manipulate the results in order to maximize their remuneration. Scipper (1989) defines the accounting accruals as the manager deliberate intervention in the process of financial communication in order to appropriate personal income to the detriment of other parties. Degeorge et al (1999) show that the managerial direction in terms of accounting choice can influence the results issued to stakeholders.

Theatrically, accounting manipulation is measured by abnormal accruals. The accruals are divided into two categories: normal accruals and abnormal accruals. The total accruals is the accounting adjustments to real cash flow. The accounting manipulation is the subject of the determination of abnormal accruals.

¹**Corresponding author: Mohamed Sadok GASSOUMA, Assistant Professor in Finance, responsible of Master in Financial and fiscal Management, Institute of Finance and Taxation, Sousse, Tunisia. E-mail : gasadok@yahoo.fr**

This has been defined by several researchers: Jones (1991), showed that the abnormal accruals depend on the physical capital and on the incomes variation. Dechow et al (1995) have developed the above-mentioned model that can negatively affect the net result and give more access to manipulation. Nevertheless, the modified Jones's model (1995) does not take into account the performance factor, which is a key factor in the measurement of accounting manipulation. Kothari et al (2005) raised this problem and added this factor reflecting performance to build a new model.

For this end, we proceed as follows: **Section 1** was devoted to the main literature review of accruals **Section 2** will be devoted to the methodology by attempting to pose empirically and theoretically the models of the accruals and the disciplinary factors reflecting the agency and signal theories. **Section 3** will be devoted to the main empirical results. The last **section 4** will address the main findings and contributions.

2. Methodology

The purpose of this article is to pose the most complete methods that will be used to measure the abnormal accruals of Tunisian banks, based on the Kothari et al (2005) model. Then, we move on to apply the "Difference in Difference" approach to see the evolution of the accruals between two periods: before the Tunisian revolution (2006-2010) and after (2011-2015). This event is supposed to be critical and determining for Tunisia, in which it has undergone a social and political upheaval that has too much influenced the financial and economic life. During this period, a whole battery of prudential and political regulations were set up to support the democratic process such as the restructuring of public institutions.

Our aim is to know, the negative contributions of this social event, its harmful impacts that lead to the inability to achieve accounting transparency and manipulation In addition, we aim to test the two founding theories of accruals: agency theory and signal theory.

2.1 Data

The data that will be adopted in this study is collected through surveys and investigations as well as through the annual reports and statistical journals of the Tunisian stock exchange, the Tunisian Financial Market Council, the professional association of banks and the Tunisian Central Bank. The selected sample is composed of 10 main Tunisian Banks over 10 years from 2006 to 2015, the period before (2006-2010) and period after the revolution (2011-2015).

2.2 Measurement of accruals before and after Tunisian revolution

The design of the accounting accruals consists to the accounting adjustments. The evaluation of the accounting manipulation of the net income is done by the difference between the total observed accruals and the normal or the anticipated accruals, which represents the discretionary part left to managers. However, the total accruals represent the difference between net income (*NI*) and the operating cash flow (*OCF*). As far as for normal accruals are concerned, there are the total accruals represented through the modified model of Kothari and al (2005).

The result of the subtraction between the total observed accruals observed (*ACT*) and the total expected accruals (normal) (*ACN*) represents the residue term ϵ_i, t . This residue is the error term of model, which can describe the unexpected accounting manipulation, expressed by the abnormal accruals (*ACAN*).

First, we start to determine the total accruals observed for Tunisian banks during the years between 2006-2015:

$$ACT = NI - OCF$$

Secondly, we calculate the normal accruals, which are the total expected accruals according to the estimated model of Kothari et al (2005) as follows:

$$\frac{ACT_{i,t}}{TA_{i,t-1}} = \alpha_0 \times \frac{1}{TA_{i,t}} + \alpha_1 \times \frac{FA_{i,t}}{TA_{i,t}} + \alpha_2 \times \frac{(\Delta Turnover_{i,t} - \Delta CUD_{i,t})}{TA_{i,t}} + \alpha_3 \times \frac{NI_{i,t-1}}{TA_{i,t-1}}$$

This model represents the total accruals $ACT_{i,t}$ in terms of the physical capital given by the fixed asset ($FA_{i,t}$), the banking cash income given by the difference between the variation of the bank turnover (interest and commissions received) and the customer debt (CUD) and the previous net income. All these indicators are expressed as a part of the total previous assets $TA_{i,t-1}$.

Insert table 1. About here

We proceed to estimate the last model for the global period from 2006 to 2015, and then we will break down these accruals in two periods to see their evolutions and their related factors. The model was estimated during the ordinary least square (OLS), after checking the Hausman test, which gave us the random effect.

Insert table 2. About here

Once the model has estimated, we proceed to collect the residuals terms of the model, which constitutes the difference between the observed total accruals and the expected total accruals describing the normal accruals. This difference gives the abnormal accruals adjusted by total bank assets.

Insert Graph 1 about here

We notice that the abnormal accruals are volatile during this period and they are worsen after the revolution. The research shows that the accounting manipulation in Tunisian banks has increased during the last period despite the disciplinary mechanisms that have been installed since the revolution in order to restructure the interbank market as recommended by the third pillar of the Basel settlement dispositive relating to the transparency and the financial communication.

Hence, we pass to apply the difference-in-difference approach, which consists of two groups for two periods: a 'control group' for banks that are not affected by the revolution and a 'treatment group' affected by the revolution respectively before and after revolution.

The 'treatment group' is composed by 3 Tunisian public banks that are judged touched by revolution according to the Tunisian central bank. The 'control group' is composed of 7 banks. The global period is divided into a period from 2006 to 2010 and a period after from 2011 to 2015.

As a result, we are generating, as demonstrated by Card and Krueger (1994), three variables: a dummy variable noted by 'time' describing the revolution event which take 0 before revolution (from 2006 to 2010) and 1 from 2011 to 2015, another dummy variable noted by 'treated' indicating 1 for banks concerned by revolution (3 banks) and 0 for banks not concerned (7 banks), and finally a combined variable noted by 'DID' which is the product between "time" and "treated".

Through these three variables, we are able to capture the impacts of revolution on the banks accruals after revolution. To avoid a multicollinearity problem, we are using only the variable DID.

Insert table 3. About here

We conclude that the abnormal accruals have significantly increased after the revolution, which show that auditors and regulators have reduced their power over bank accounting, which has resulted in a worsening of accounting manipulation, contrary to what has expected from the revolution. The positive sign of Diff-in-Diff (+ 0.015) demonstrates this result with a significance at the level of 1%. This rise

of abnormal accruals related to revolution can be explained by several disciplinary factors including the agency and signal theory.

2.3 Effect of market disciplinary factors on abnormal accruals

Once the accruals are estimated, we go on to test agency and signal theory. We therefore rely on the theoretical literature to draw on the main factors that influence the abnormal accruals:

The relationship between the shareholder ownership and the abnormal accruals can be analyzed under the hypothesis of the concentration of the shareholders. According to the entrenchment theory approach, the concentration of power within a family in SMEs can result in the allocation of private benefits to members of the family, to the detriment of the minority shareholders. The weakness of the governance mechanisms implemented to protect minority shareholders, as well as the strong asymmetry of information, are likely in this case to facilitate the accounting manipulation. (Margaritis and Psillaki, 2010). The concentration of ownership (*CONC*) will be used in our model by the sum of the participation of the different shareholders owning more than 5% in the capital of each bank.

On the other hand, the nature of the leaders leaving can significantly influence their motivations. Murphy and Zimmerman (1993), Wells (2002) have shown that in the case of weak performance of the firm, the incentive for the upward manipulation of the net income will be stronger in the context of forced leaving, than in the case of a planned leaving. Similarly, as far as forced leaving, the stakeholders expectations are more required than the planned leaving.

The degree of change of the leaders can give us an idea on the entrenchment. Leaders who want to stay in their functions will adopt specific investments that focus on their competences. Once they leave bank, investments fall. To keep their positions, the leaders in this case, will smooth the net income using this kind of the investment. In our case, this factor (*ENR*) is expressed in term of the position manager seniority, using the natural logarithm of number of years provided by the manager in each bank at each year.

The board of directors give the supreme example of the bank monitoring. For this end, it must operate independently of the power of the CEO. This independence could be provided by the separation between two positions: Chief executive and the Chairman of the board of directors. Davidson and al (2004) and Dunn (2004) confirm that income-smoothing increases, when functions are provided by one person rooted. This diverges with the work of Pigé (1998) and El Aouadi (2001). However, they have found a negative and significant sign of duality. In this context, we will take a variable Dummy (*DUAL*), which takes 0 in case of separation and 1 in case of duality of function.

The agency theory states that the presence of an audit committee on the board of directors is sufficient to ensure the reliability of the financial statements. Indeed, many researches consider the independence of the members of the audit committee as a primordial quality to a best monitoring. In addition, Keasey and al (1993) show that the independence of audit committee members is the most important criterion of the financial statements reliability. This independence will be approximated by the number of external members within the audit committee adjusted by the natural logarithm (*EXTA*).

To better understand the role played by the auditors, we added three control variables: the fees of the external auditors (*HONA*), the duration in term of years of the relationship between the external auditor and the bank (*RLAB*) and the number of the annual audit committee meetings (*MA*).

Frankel and al. (2002) demonstrate that high audit fees reduce the accounting manipulation. In contrast, Antle and al. (2006) show an inverse relationship: in their study, high fees lead to an increase in the accounting manipulation. The overpaid of auditors leads to an interest collusion with the managers and therefore a decrease in their independence.

On the other hand, for the second factors of audit committee, Frankel and al (2002) and Chang (2005) have shown that the long relationship between the auditors and the bank opens up a field of interests

collision, which facilitates manipulation through the flexibility of accounting practices. Unlike Vanstraelen (2000); Gosh and Moon (2005) have demonstrated that a long-term relationship favors business continuity and the informative content of financial statements, which reduce accounting manipulations.

Insert table.4 about here

The model so deduced takes the following expression:

$$\begin{aligned}
 \text{Abnormal accruals}_{i,t} &= \alpha_0 + \alpha_1 \text{CONC}_{i,t} + \alpha_2 \text{ENR}_{i,t} + \alpha_3 \text{DUAL}_{i,t} + \alpha_4 \text{EXTA}_{i,t} + \alpha_5 \text{MA}_{i,t} \\
 &+ \alpha_6 \text{HONA}_{i,t} + \alpha_7 \text{RLAB}_{i,t} + \varepsilon_{i,t}
 \end{aligned}$$

Insert table.5 about here

3. Main Results

Before the Tunisian revolution in the end of 2010, when the shareholders ownership concentration was at 39.62%, it will tends to mitigate the abnormal accruals. This shows that the majority stakeholders power more control over the managers as well as the auditors to give greater informational bank transparency, which makes accounting manipulation difficult to do. After the revolution, concentration rose slightly to 41.3%. The rise in shareholders ownership that has occurred after revolution has given more accounting manipulation.

This concentration increase had escaped the managers of the control authorities and diverted the shareholders' interests to their benefit by making private profits and encouraging managers to hide information on external auditors. These results suggest that beyond a certain level, the concentration of shareholders is unfavorable, accordingly to the assumption of entrenchment and shareholders monitoring checked by Margaritis and Psillaki (2010).

The leaders' entrenchment had a very remarkable rise after revolution; it went from 0.14 to 0.44. After revolution, Tunisian banks have maintained better leaders in their functions, which caused an entrenchment oriented towards specific investments focused on their human capital, resulting in a manipulations discretionary-space in order to camouflaged the real financial health, unlike what happened before revolution when leaders' entrenchment offer more financial stability contributing to decline in the accounting accruals.

Another determining factor that could aggravate the accounting manipulation is the forced leaving of managers. Murphy and Zimmerman (1993), Wells (2002) showed that the planned leaving is better than a forced leaving in which the leaving manager come to manipulate the accounting so that the successor could not notice the real anomalies that occurred during his mandate. This situation was observed just at the revolution event, when managers suddenly received their dismissal.

The control exerted by the board of directors mainly by the president of the board before revolution, can mitigate the accounting manipulation. After this event, the functions duality contribute to manipulation upward. This can go back to the power abuse by the CEOs. In this sense, the centralization of decisional power causes an information asymmetry between the shareholders and the managers, which does not allow them to exercise their controls through their presence in the board.

In addition, we note that, after revolution, the duality is maintained at its initial level, which does not allow controlling the accounting manipulation that can exist after the revolution. Based on the approach of Davidson et al (2004) and Dunn (2004), we infer that a rooted leader who is both chairman and chief executive officer only exacerbates the manipulation after the revolution.

Before revolution, the external auditors did not figure in the audit committee they had no effect on the accounting manipulation because they did not figure. After the revolution, their presence was slightly

significant, which tend to average towards an external auditor per bank. We note, that despite the intervention of the banking authorities to integrate these external auditors in committee, the manipulation has worsened, given the alliances between these representatives with Tunisian banks. Our results differ from those of Keasey et al (1993) who showed that the independence of audit committee members was the most important criterion affecting the reliability of the financial statements

The meetings made by the audit committee provides more compromise between the members, which makes it easier for the auditors to better control the managers in order to avoid any possible slippage of the results. This was present before the revolution, but afterwards, the meetings only increase the tensions between the auditors, which gives interest conflicts giving a chance to accounting manipulation.

To a better understanding of our result, we test the remuneration of these external auditors: the more the last is rewarded, the better he will have a high chance to manipulate, and this is before and after the revolution. After revolution, the external auditor's remuneration has gone up leading more discretionary-space for managers to make their smoothing results. Antle et al. (2006) found this same result, he considered that a strong reward of the auditors makes lose their quality of independence, which will facilitate better to interests coalition.

4. Conclusion

Through this study, we have identified the abnormal accruals of Tunisian banks based on the most complete model of Kothari et al (2005). We used a differentiation approach "DID" that was used frequently in crisis period designed by Laeven& Valencia (2012) to the subprime crisis (2007/2009). This approach has shown us that the accounting manipulation measured by abnormal accruals increased significantly after the revolution.

We have relied on agency and signal theory (Jensen and Meckling, 1976, Ross et al, 1969) to identify the disciplinary factors of accruals, based on studies of the information asymmetry delegation (Dye 1988, Scipper 1989, Degeorge et al (1999).

We have shown that the increase of abnormal accruals in Tunisian banks after the revolution is mainly due to the ownership concentration, which has increased slightly, contributing to a possibility of accounting manipulation by managers. The latter, just at revolution following the radical institutional change, were able to hide the financial anomalies; their successors did not stand up to the majority shareholderspower, they continued to satisfy them by smoothing the accounting results. This situation was supported by the combination between direction and board, leading to more discretionary-space to smooth the accounting results.

On the other hand, the establishment of external auditors in the audit committee of Tunisian banks failed, since their presence have increased manipulation thanks to the coalition that can be between them and managers under the incitement of the majority shareholders in term of reward, remuneration and relationship.

In conclusion, the Tunisian revolution has reinforced the market discipline such as the presence of the external auditors in the audit committee as well as the increase of the meetings, but it has not given any informational transparency due to the ownership concentration power. The Tunisian banks must dilute their capital in order to lower the delegation of shareholders power and exercise more control over the managers to a better management of accounting result, through the establishment of reciprocal control between them and the external auditors.

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Variable	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
ACT	-4415.9	14264	11756.5	36060.7	40269.4	41400.8	31330.1	41863	22973.5	61612.9
IMMO	54723	57788.3	65895.9	73461.6	79086.5	82824.8	82424.1	84964.7	87259.4	91539.8
NI	447.7	7636.8	35796.2	42400.2	41205.4	34283.1	41707.1	20707.1	61550.7	67611.9
TURNOVER	208490.5	235505.3	264082.8	268358.5	291842.7	311063.9	330575.2	384365.9	438636.6	466333.5
CUB	2136898	2246369	2591796	2829597	3364427	3771247	4028393	4189135	4498992	4674444

Appendix

Table.1.1 annual statistic descriptive (abnormal accruls model)

Table.1.2 Banking statistic descriptive (abnormal accruls model)

	ATB	Amen Bank	ATT. Bank	BH	BIAT	BNA	BT	STB	UBCI	UIB
ACT	38470.7	62178.7	17715	15422.1	50153.1	30672	59355.8	8416	18351.8	-3620.2
IMMO	57510.8	102433	119749.4	60300.1	151969.9	57099.1	42697.6	80760.2	49324.7	38123.3
NI	42440.6	56787.6	29723.9	21047.1	68840.5	32648.1	65738.3	8601.9	22130.7	5387.5
TURNOVER	254052.7	374268.3	283237.5	340723.2	483847.3	449164.2	231052.6	414302.8	164239.7	204366.6
CUD	2172864	4011325	2719367	3999817	4386698	5398736	2521104	4972974	1680367	2468045

Table.2 Model of accruls measures

$\frac{ACT_{i,t}}{TA_{i,t-1}}$	Coef.	Std. Err.	Z-statistic	P>z
$\frac{1}{TA_{i,t}}$	19711.93**	9082.287	2.17	0.030
$\frac{FA_{i,t}}{TA_{i,t}}$	-0.0206005**	0.0216572	-2.19	0.041
$\frac{(\Delta TURNOVER_{i,t} - \Delta CUD_{i,t})}{TA_{i,t}}$	0.0815735***	0.079283	2.43	0.001
cons	0.0004554*	0.0029077	1.96	0.072

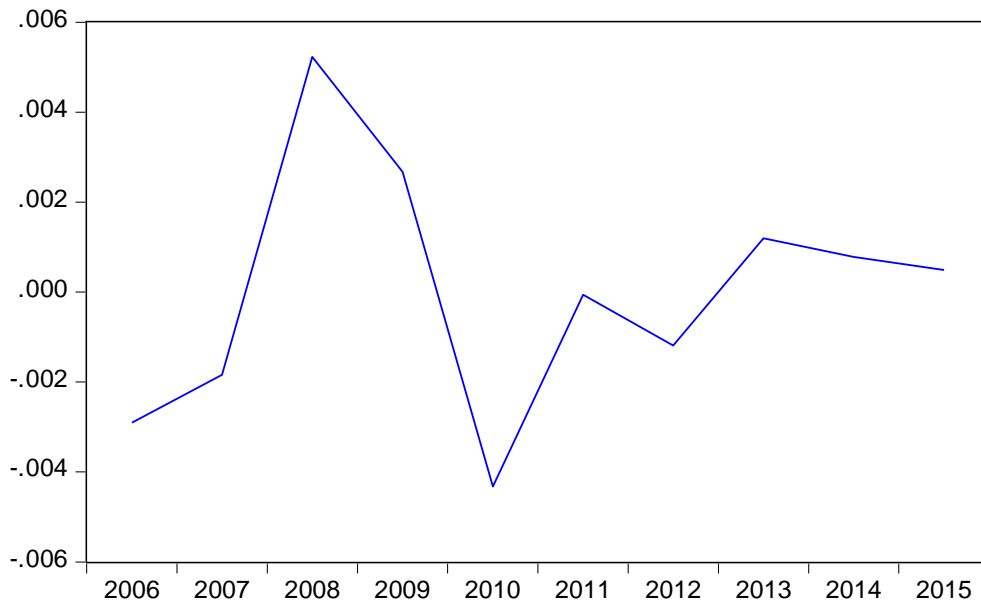
*** means that the variable is statistically significant at the 1% level.

** means that the variable is statistically significant at the 5% level.

* means that the variable is statistically significant at the 10% level.

Graph.1 Abnormal accruls

Mean of abnormal_accruls



Tab.3.1. abnormal accruls period and groups for difference and difference approach

Period	Cost efficiency		
	Before	After	Total
Control	35	35	70
Treated	15	15	30
Total	50	50	100

Source : Author's calculations (Stata.13)

Tab.3.2 Outcome of difference in difference to cost and profit efficiency

Outcome var.	Abnormal accruls
Control	-0.004
Treated	-0.000
Diff (T-C)	-0.004 (-2.57)
Control	-0.006
Treated	0.005
Diff (T-C)	0.011*** (3.39)
Diff-in-Diff	0.015*** (3.21)

Source : Author's calculations (Stata.13)

R-square: 0.00* Means and Standard Errors are estimated by linear regression **Inference: *** p<0.01; ** p<0.05; * p<0.1

Table.4 descriptive statistic of market discipline factors

	Mean	Mean
Anormal accruls	0.000735	-0.0007203
CONC	0.3962532	0.4130832
ENR	0.14	0.44
DUAL	0.3	0.3
EXTA	0	0.0533333
MA	3.16	3.28
HONA	11.85567	12.23678
RLAB	2.5	2.71

Table.5 Estimation Governance factors on abnormal accruls

Abnormal accruls	Before revolution		After revolution	
	Coef.	z-statistic	Coef.	z-statistic
CONC	-0.0245655***	-3.49	0.0191246***	3.89
ENR	-.0017249*	-1.82	0.0018169*	1.86
DUAL	-0.0008*	-1.92	0.0150**	2.32
EXTA	0.012405	1.42	0.0124126*	1.78
MA	-0.00086**	-2.13	0.0009542**	2.08
HONA	8.30e-08***	3.90	1.24e-07***	3.58
RLAB	-0.001021***	-3.64	0.0009409***	3.67
Constant	0.0000557***	3.91	-0.0378273**	-2.52

*** means that the variable is statistically significant at the 1% level.

** means that the variable is statistically significant at the 5% level.

* means that the variable is statistically significant at the 10% level.

