



The Determinants of Earnings Management: Empirical Evidence in the Tunisian Banking Industry (1999-2010)

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Abstract

The objective of this paper is to determine factors explaining earnings management by universal banks in Tunisia. To examine this question, we conducted investigations in the empirical literature in this field of research, to select the major econometric models treating earnings management. Our sample consists of ten banks observed during the period from 1999 to 2010. Results show that there is a significant and positive relationship between earnings management proxied by discretionary accruals and operational risk, while loan loss provisions are inversely related to earnings management. We have also shown that the systematic risk, total risk and dividend per share do not explain earnings management practices by Tunisian banks.

Key words: earnings management, discretionary accruals, loan loss provision, risk.

JEL classification: M41, G21, G32

Introduction

Healy and Whalen (1999) present earnings management as follows: "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on accounting numbers." Earnings management in the banking industry has some specific and is based on two dimensions:

- Incentives related to regulatory constraints, and
- The method of calculating earnings management proxies.

In fact besides the constraint of achieving satisfactory earnings for shareholders on the one hand and meet financial analysts' forecasts, on the other hand, the bank manager of a bank is facing prudential rules imposed by national monetary authorities (Central Banks) and international ones (Basel agreements). Banking regulation requires regulatory capital ratios to measure capital adequacy and to identify financially troubled banks. As a result, banks with low capital ratios are likely to increase their value through either accruals (eg, loan loss provision) or real activities, for example, capital gains or losses from securities sales. (Moyer 1990, Beatty et al., 1995; Ahmed et al. 1999)

Banking regulation opts for supervision and manager discipline. Indeed, a bank whose balance sheet seems to be too risky for regulators is under considerable pressure to develop operational changes and eventually replace managers (Demsetz and Lehn, 1985).

The discretionary accruals are part of accounting accruals. They include items representative of manager forecasts of uncertain future events. They can also be misleading when they are manipulated to distort public information in order to get private gain (Dechow and Dichev 2002; Wasan and Boone 2010). Tunisian banks tend to manage earnings to meet requirements of both shareholders and other stakeholders. Overall, Tunisian universal banks tend to have increasing earnings, even during the recent economic crisis and even now after the Tunisian revolution or the European crisis. Previous studies on the Tunisian banking industry showed evidence that banks practice earnings management. Indeed, Hamza and Taktak (2009) studied a sample of universal banks over the period 1998 to 2007. The authors showed that Tunisian banks in recession times before 2005 manipulate loan loss provisions to achieve a target earning level (accounting management of earnings) while from 2005, these banks are moving to more real management of earnings (sale of equity securities).

To conduct our empirical investigations, we identify earnings management determinants over the period 1999-2010 and we adopted the methodology of Wan Mohammad et al. (2011).

2. Literature review and hypotheses development

2.1. Earnings variability

Gebhardt et al. (2001) report that risk premiums are consistently higher for commercial banks and earnings variability as well as predictability are important factors in explaining cross-sectional differences in these risk premiums. Practitioners also consider financial earnings

variability as an indicator of risk. Barth et al. (1995) argue that bank shareholders will demand a higher risk premium to compensate for a level of greater risk, which is observed from earnings stream variation. This study showed that managers of banks that show higher earnings variability will be more encouraged to report the prospects of their future earnings.

Theoretical basis of the relationship between earnings variability and signaling purpose is provided, inter alia, by the market microstructure. The theory supports hypothesis that loudest earnings tend to exacerbate information asymmetries between bank managers and outside investors on the one hand, and between investors who hold private information and market makers on the other hand. To compensate for this informational imbalance, increasing bid-ask prices generated by market makers is more important for banks with less predictable earnings (Affleck-Graves et al., 2002). Thus, the resulting rises in adverse selection component of the bid-ask prices, increase the cost of bank capital. In the case of a bank having higher historical earnings variability and if its manager can reduce the adverse selection component, then transaction costs of this bank will be lower. Thus, the market for its securities will be more liquid and stock prices will be higher (Callahan et al, 1997). Therefore, managers of banks with high earnings variability are more likely to engage in a signaling process through loan loss provisions to reduce adverse selection and, consequently, the cost of capital.

From another point of view, the study of Yasuda et al. (2004) develops the following two hypotheses:

- Under the hypothesis of the rational investor, managers, by controlling the discretionary part of accruals, may distort reported results to make the financial situation of their banks looks better,. However, rational investors anticipate correctly these manipulations. Thus, the level of discretionary accruals should have no impact on the market value of risky banks.
- Inversely, the hypothesis of naïve investors states that these investors misinterpret the increase in reported earnings. In fact, they consider it as favorable information about the bank's financial soundness, thus they underestimate the inherent risk. Therefore, discretionary accruals should be negatively associated with the bank risk level. Yasuda et al. (2004) test these two hypotheses for 48 Japanese banks in the period 1990 to 1999, they show that during the period 1990 to 1997, the naive investor hypothesis holds, that is discretionary accruals are negatively associated with the bank risk level. However, after the collapse of three major Japanese banks in 1997 and 1998, investors have become more cautious about handling earnings, and have begun to assess the

financial health of banks in a more rational basis, thus leading to verify the hypothesis of rational investor.

The study of Wan Mohammad et al. (2011) tests, inter alia, the hypothesis that there is a positive relationship between the risk incurred by banks and earnings management. Bank risk is measured by two proxies: operational risk as the variance of income and systematic risk, determined from the market model. The results obtained from a sample of 10 Malaysian banks for the period 2000-2009 have corroborated this hypothesis. Indeed, the operational risk is positively associated with discretionary accruals indicating that the potential of earnings management exists when the operational risk is high. Regarding bank's specific risk, there is a negative association with discretionary accruals, which is consistent with previous studies. In addition, the non-significance of systematic risk implies that crisis in the financial system has no effect on earnings management of Malaysian banks. Based on this range of studies, we consider the following hypothesis:

H₁: There is a positive relationship between the risk a bank faces and earnings management

2.2. Loss loan provisions

Kim and Kross (1998) find that banks with low regulatory capital ratios record a lower level of loan loss provisions. Also, some banks tend to reduce earnings volatility by reducing earnings of years during which the bank has made a surprisingly strong performance and increased earnings over years when the bank recorded a low performance. Smoothing earnings could help to reduce information asymmetry between managers and outside investors (outsiders) and avoid potential scrutiny of the bank's financial situation by regulators, market authority, or shareholders (Beatty and Harris, 1999; Beatty et al., 2002; Liu and Ryan 2006). The majority of previous studies (Collins et al 1995., Schrand & Wong, 2003; Kanagaretnam et al., 2004; Liu and Ryan 2006, Fonseca and Gonzalez 2008) show that managers smooth earnings through loan loss provisions and capital gains or losses on disposal of securities.

In reality, process of loan loss provisions adjustment remains opaque. In fact, the discretion of bank managers regarding the estimation of these provisions is considerable (DeBoskey and Jiang, 2012). The SEC and four other U.S. banking regulators said that "Although management's process for determining allowance adequacy is judgmental and results in a range of estimated losses, it must not be used to manipulate earnings or mislead investors,

funds providers, regulators or other affected parties" (Federal Reserve release, November 24, 1998). Recognizing the importance of reported earnings, the Accounting Standards Board (ASB) issued SFAS No. 118 "Accounting by Creditors for Impairment of a Loan-Income Recognition and Disclosures," which provided detailed guidelines for estimating Loan Loss Provision (LLP) to minimize the flexibility of managers in handling reported earnings. Given that tax expenses represent a significant cost for banks, several studies find also that banks manage realization time of capital gains or losses on disposal of securities to reduce the overall tax burden (eg, Beatty et al 1995, Collins et al 1995; Beatty and Harris 2001). Linsmeier and Warfield (1992), for their part, find that the market valuation of capital gains or losses on disposal of securities is related to tax management.

More generally, some studies divide loan loss provisions in a discretionary component and a non-discretionary one. They assume that discretionary loan loss provisions are used for earnings management. Beaver and Engel (1996) show that negative (positive) loan loss provisions values are associated with upward (downward) earnings management practices. In addition, capital markets evaluate negatively the non-discretionary component while appreciate positively the discretionary part.

Cheng et al (2011) have adopted the methodology of Beaver and Engel (1996) in assuming non-discretionary component of provisions as a proxy for earnings management and tested the relationship between the incentives of managers and earnings management. Based on a sample of 65 banks and 15 savings funds studied in the American context for the period 1994 to 2005, the authors find a positive association between equity incentives and upward earning management for banks exposed to potential intervention of regulatory authorities.

Based on the results of these empirical studies we consider the following hypothesis:

H₂: A positive relationship exists between the loan loss provisions of a bank and its earnings management policy

2.3. Dividend distribution

Distribute dividends or reach a certain dividend threshold is a factor of earnings management. In a sample of 37 Finnish companies studied over the period 1970 to 1989, Kasanen et al. (1996) show that these firms manage earnings upward in response to pressure from large institutional shareholders to receive dividends. More specifically, these companies manage earnings upward if the latter are too low to pay target dividends, and manage down the

earnings to reduce tax, if initially earnings are higher than those required for the dividends payout. Also, shareholders' expectations for dividends increase as a result of the rising reported earnings. For their part, managers are able to manipulate downward earnings to meet regulatory restrictions in terms of dividends (Edelstein et al, 2008). These results confirm the findings of Kato et al. (2002). They found that dividend policy boosts earnings management.

Daniel et al. (2008), based on a sample of companies listed in the S & P 1500, for the period 1992 to 2005 show that companies tend to manage earnings upward when their earnings are lower than the expected levels of dividends. This behavior is evident only for firms with positive debt and a debt policy more aggressive before Sarbanes-Oxley, they benefit from the reduced dividend tax of 2003, subsequent, in firms with high payout ratios, in firms whose CEOs receive higher dollar dividends, in firms whose CEOs have higher pay-performance sensitivities, and in firms that raise less outside equity

Ahmed et al. (2010) examine the impact of earnings management on the dividend policy of 86 Pakistani companies for the period 2004 to 2009. In fact, the results show that discretionary accruals have no impact on dividend policy. Indeed, earnings manipulation by companies has other objectives other than adjusting the level of dividend distribution. However, according to the study of Jahanzaib et al. (2012) which was conducted on a sample of 23 Pakistani companies for the period 2005 to 2009, earnings management and dividend policy are negatively correlated. This correlation is so low that has almost no impact. The authors explained this relationship by the global economic crisis. Indeed, in this period, companies intensify managing their earnings and begin to reduce dividend payout.

The literature review above allows us to consider the following hypothesis:

H₃: There is a positive association between dividend per share of a bank and earnings management

3. Methodology

Our sample consists of 10 Tunisian universal banks, which are Attijari Bank, Banque Internationale Arabe de Tunisie (BIAT), Banque Nationale Agricole (BNA), Société Tunisienne de Banque (STB), Banque de Tunisie (BT), Banque de l'Habitat(BH), Amen Bank, Arab Tunisian Bank (ATB), Union Internationale de Banques (UIB), Union Bancaire pour le

Commerce et l'Industrie (UBCI). The study period chosen is 1999-2010. The estimation of our panel data models are obtained using STATA 10.

We adopted the methodology of Wan Mohammad et al. (2011) because they studied a bank sample similar to our selected sample.

The estimated model is:

$$DA_{it} = \alpha_0 + \alpha_1 DPS_{it} + \alpha_2 LLP_{it} + \alpha_3 OPER_{it} + \alpha_4 FIRM_{it} + \alpha_5 SYSTEM_{it} + \varepsilon_{it} \quad (1)$$

With:

DA: Discretionary accruals measured from the modified Jones model

DPS: Dividend per share

LLP: Loan Loss Provision

OPER: Operational risk. Measured as the variance of the income of a bank for five years before the year of study

FIRM: Total risk, determined by the variance of bank stock returns

SYSTEM: Systematic risk, determined from the equation of the market model

The determination of Dependent variable (DA) is based on the modified Jones model as follows:

$$\frac{ACCR_{it}}{TA_{i,t-1}} = \varpi_a \left(\frac{1}{TA_{i,t-1}} \right) + \varpi_1 \left(\frac{\Delta REV_{it}}{TA_{i,t-1}} \right) + v_i \quad (2)$$

With:

ACCR: Total Accruals, calculated as: $ACCR = \text{net income} - \text{cash flow from operating activities}$

TA: total assets

$\Delta REV: REV_t - REV_{t-1}$, with REV: bank income calculated as total operating revenues + other operating revenues + gains from ordinary elements + gains from extraordinary elements

The discretionary accruals (DA) are residuals of the equation (2). The discretionary accruals can be calculated as follows:

$$DA = ACCR - NDAC$$

Systematic risk is calculated based on the following market model double:

$$R_{it} = \alpha + \beta_1 R_{mt} + \beta_2 R_{bt} + e_{it} \quad (3)$$

With:

R_{it} : Quarterly return on a security of bank i in quarter t

R_{mt} : Quarterly return on TUNINDEX in quarter t

R_{bt} : Quarterly return on treasury bonds considered as the Money Market Rate (MMR).

The equation (3) allows us to determine the annual systematic risk of bank i .

4. Results

Table 1 shows that the variable DA has an average value of 0.0148173 and a maximum value of 0.0583913. The positive value of accruals informs us about the existence of upward earnings management practices. Tunisian banks opt for this policy to avoid losses or earnings declines. These results corroborate those of Peasnell et al (2005) and Wan Mohammad et al. (2011).

Tableau 1 : Descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
DA	120	0,0148173	0,0140762	-0,0042986	0,0583913
DPS	120	0,7164167	0,7010045	0	3
LLP	120	0,0309759	0,0288057	-4012000	1 ,91 E+08
OPER	120	2,68E+07	1,81 E+07	3683807	8,70 E+07
SYSTEM	120	0,0031608	0,0021244	0	0,0095722
FIRM	120	0,013577	0,032498	0	0,2904541

The correlation matrix (table 2) shows a low correlation between the explanatory variables, which eliminates the assumption of multicollinearity between these variables. However, we observe a strong correlation of the two variables OPER and LLP, with the dependent variable DA. This fact leads us to predict a certain significance of these variables.

The Hausman test ($Prob > chi^2 = 0,4095 > 5\%$) indicates that the random effects model provides the best estimation. Note that the model assumes that there are no individual fixed effects.

Tableau 2: The correlation matrix

	DA	DPS	LLP	OPER	FIRM	SYSTEM
DA	1					
DPS	0,0842	1				
LLP	-0,4764	-0,1591	1			
OPER	0,6598	0,0637	0,2238	1		
FIRM	-0,0661	0,1322	0,0074	-0,0117	1	
SYSTEM	-0,1676	-0,0322	0,0299	0,1226	0,0869	1

The estimation results of the model are shown in Table 3 below:

Table 3: The results of discretionary accruals estimation by the random effects model

Variable	Coefficient	Standard Error	$P > z $
DPS	-0 .0001541	0.001641	0.925
LLP	-1 .45 E-10	3.08 E-11	0 .000***
OPER	4.04 E-10	5.42 E-11	0.000***
SYSTEM	0.5336708	0 .03919711	0.173
FIRM	-0.0180875	0.025845	0.484
Constant	0.0321586	0.0026772	0.000

***Significatif au seuil de 1% ; **Significatif au seuil de 5% ; *Significatif au seuil de 10%

The overall model is significant with $\bar{R}^2 = 0.56$. Results show that the variables DPS, SYSTEM and FIRM are not significant. Thus dividend per share, systematic risk and total risk of Tunisian banks do not explain earnings management. Moreover, at confidence level of 1%, OPER and LLP variables are significant. We have shown a negative relationship between loan loss provisions (LLP) and earnings management (DA). Indeed, banks manipulate upward these provisions in order to decrease earnings, which is explained by a downward earnings management. Inversely, when banks choose to handle upward earnings, they tend to lower the value of loan loss provision. In addition, a rising operational risk influences positively earnings management practices. Thus, income volatility leads a bank to become more involved in the earnings manipulation in order to hide the risk incurred. These results are consistent with those of Beaver and Engel (1996) and Wan Mohammad et al. (2011), which showed further that the variable total risk (FIRM) is also significant.

5. Conclusion

We have shown the existence of earnings management practices in the Tunisian banking industry. Important earnings management is related to low loan loss provision and high income volatility (operational risk). In addition, systematic risk, total risk and dividend per share do not explain these practices.

Tunisian banks tend to manage their earnings downward by increasing loan loss provisions and vice versa. In addition, during the study period 1999-2010, these banks are engaged in more important earnings management practices when operational risk increases. Indeed, manipulation of earnings allows banks to hide the operational deficiencies.

Our analysis can be improved by the introduction of other explanatory variables of earnings management, such as executive compensation, or economic growth.

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