# The Role of General Managers of a Credit Union Movement in Determining the Loan Loss Estimation on Precise Commercial Loans[1]

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## ABSTRACT

*This paper presents a literature review of loan loss management by bank managers according to positive accounting theory. In an empirical manner, the paper explores the role of general managers of a Canadian credit union movement in the management of the estimated losses on precise commercial loans.*

***Keywords:*** *Loan loss, Credit union, Commercial loan, Earning management, Positive accounting theory*

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## INTRODUCTION

The agency theory is based on the existence of information asymmetries and conflicts of interest in organizations, between the agents and the principal or between agents (Levinthal, 1988). The more difficult it is for the principal to monitor the efforts made by the agents as they carry out their specific tasks, the more organizations are exposed to agency costs. The characteristics of the tasks (e.g. intellectual work vs. manual work) or the size of the organization can make the monitoring of agents more difficult. Since information plays an essential role both for granting loans and file follow-up, the agency theory applies especially to financial institutions.

In fact, because of information asymmetry, financial institution managers have, to some extent, the opportunity to over- or under-state their loan loss estimation (LLE) depending on what they think maximizes their utility. The general managers of local credit union (GM) are also in a position of information asymmetry vis-à-vis the financial institution. This is particularly true for the identification of businesses that are struggling financially and the estimation of the loan loss that could be incurred. Consequently, they can also engage in the management of accounting information that is relevant to various aspects of their work.

The paper will develop as follows. Section II examines the motivating forces behind LLE management by managers. Section III poses the research hypotheses and the methodology. Section IV presents the results and the analysis. Section V concludes the paper by explaining the research contribution and some future research possibilities in the area of earning management by local credit union (LCU) agent.

## LITERATURE REVIEW[2]

The incentive-based compensation system can motivate managers to engage in accounting information management. That system depends on accounting information, which is compiled according to recognized standards and is auditable by independent third parties (Coulombe and Tondeur, 2001). Despite these characteristics that increase reliability, some discretionary leeway still exists, this leaves room for management of accounting information. From the perspective of accounting information management, it can be possible to identify four strategies that can be adopted by a manager according to the motivations that drive him: 1) taking a bath (strong income minimization), 2) income minimization, 3) income maximization and 4) income smoothing.

Healy (1985) corroborates the earnings minimization hypotheses when managers are unable to meet the threshold performance level and the earnings maximisation when the managers are in the increasing premium zone. By doing so when they are unable to meet the threshold, they create provisions that they will be able to reverse in subsequent years when the threshold is meet. Applied in a banking context, these results would indicate that managers have a tendency to under-state their loan loss estimation when they fall into their increasing premium zone and to over-state it otherwise.

In accordance with the big bath hypotheses, new management teams tend to significantly reduce earnings and then blame the situation on decisions made by the previous administration (DeAngelo (1988). By that logic, a new manager of a financial institution could over-state the LLE in order to free his

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[2] The literature review was part of a theoretical article previously published by the Journal of Performance management (2008 issue 3) written by Sebastien Deschenes.

administration of any Responsibility pertaining to loans that were granted before he was hired.

On the other hand, the income smoothing hypotheses aims at maximizing the long-term value of a company. Indeed, reducing the volatility of earnings, decreases the risk perceived by investors. As a result, investors would discount anticipated cash flows at a lesser rate in order to establish the stocks' value (Fields and *al.,* 2001). McNichols and Wilson (1988) have demonstrated that managers use, among other things, loan loss estimation to implement an income smoothing strategy. Using this strategy enables bank managers to manage two of the expectations they have to meet. That is their bonus threshold and their performance. On top of that, this strategy allows them to gain stockholder confidence as to the quality of their management. In addition, given the low risk perceived, income smoothing reduces the propensity of regulatory agencies to pay close attention to the bank (Beaver and Engel, 1996). Literature shows that, in some countries, management of accounting income is not as big an issue as in others (Fonseca and Gonzalez, 2007). That could be explained by the presence of rules and regulations that protect investors, high standards regarding the disclosure of financial information, restrictions on the operations of financial institutions, government monitoring and the work done by external auditors. According to the same authors, bank managers who practice in countries where financial markets are both developed and important are more likely to manage accounting income. Using a sample of banks from 40 countries (excluding the United States), Fonseca and Gonzalez (2007) reached the conclusion that, as a rule, bank managers manage accounting earnings by smoothing them through loan loss estimations. Research by Beaver and Engel (1996), Kim and Kross (1998) and Greenwalt and Sinkey (1988) in the United States, by Shrieves and Dahl (2003) in Japan and by Ghosh (2007), in India, all support the income smoothing hypotheses.

Investors have a tendency to penalize heavily public corporations that fall short of analysts' expectations by reducing sharply stock prices (Barth and *al.,* 1999). Therefore, Beatty and *al.* (2002) have hypothesized that managers of public banks are under more pressure to practice earnings management than counterparts in private banks. Their research, which is based on a sample of American banks, revealed that compared to private banks, public banks were more likely to smooth earnings in order to show a constant upward slope over many fiscal years. They found that public banks: 1) rarely show declines in earnings, 2) were more likely to under-state loan loss estimations and to realize gains on securities to avoid a decline in earnings and 3) presented longer increasing earnings time series. The research done by Fonseca and Gonzalez (2007) also supports the hypotheses that public banks are much more likely to manage their earnings. However, they point out two theoretical reasons that could have explained a different result. The first is that private banks, which are usually smaller in size, often have a less diversified asset portfolio, making their operations riskier. They would therefore have more incentives to lessen the risk perceived by external observers. The second reason, also associated to their small size, is that they tend to attract less attention from regulatory agencies. Because of that, they have greater leeway to manage their accounting earnings. Even though Beatty and *al.* (2002) conclude that public banks tend to use earnings management more extensively, their studies show that private banks also manage earnings.

Consumer loans, by nature, are more homogeneous than commercial loans. Moreover, from the perspective of the financial institution, the credit risk is spread over a large number of files. These two factors would make the statistic loan loss estimation easier. In contrast, commercial loans are more heterogeneous both in terms of the risk of default and the risk of loss. For this reason,

loan loss estimations tend, to a greater extent, to be conducted by evaluating files on a loan-by-loan basis. In the early 1990s, Liu and Ryan (2006) analyzed a sample of American banks. They concluded that during the early 1990s economic recession period, banks showing a low profitability managed earnings upward by under-stating losses on heterogeneous loans. Furthermore, they found that during the economic boom between 1991 and 2000, they had managed earnings downward by over-stating losses on homogeneous loans.

Banks that are more successful at income smoothing in times of economic prosperity (over-stating losses to reduce earnings) are those that are the most profitable and that hold large portfolios of heterogeneous loans (Liu and Ryan, 2006). To do so, for instance, managers only have to change an administrative policy, like the number of days past due that triggers a projected loan loss or the allowance rate they apply to the loan. However, it is difficult to under-state earnings using heterogeneous loan portfolios because, to do this, one has to coordinate the work of loan officers in the opposite direction of their self-interest, which is to show that loans for which they are responsible do not incur losses.

Banks can manage earnings using strategies other than income smoothing over time. However, few studies have looked into this. The big bath strategy used when non-discretionary earnings are negative was not significant in the Japanese banking sector between 1989 and 1996 (Shrieves and Dahl, 2003). Two reasons can be provided to explain why bank managers do not use the big bath strategy when the institution shows poor earnings. The first rests on the fact that managers are more concerned with maintaining regulatory capital than with maximizing compensation (Shrieves and Dahl, 2003; Krishnan, 1999). The second argues that financial institution managers who fail to meet established goals could adopt

a short-term earnings maximization strategy in order to keep their job (Barro and Barro, 1990; Defond and Park, 1997).

## Regulatory Capital Management

Financial institutions that maintain the required regulatory capital ratio by a healthy margin appear safer. These institutions also pay lower insurance premiums, are under less scrutiny from regulatory agencies and have less restriction in business development. Being aware of these advantages, financial institution managers may want to artificially increase this ratio by managing accounting numbers. Extensive research support loan loss estimation management based on regulatory capital. The study by Ahmed and *al.* (1999), as well as that of Shrieves and Dahl (2003) with a sample of Japanese banks, argues that engaging in accounting information management to calculate regulatory capitalization, is more significant in banks showing a low ratio. More precisely, Liu and *al.* (1997) found that banks with low regulatory capital ratios waited until the fourth quarter to manage accounting information to increase their capitalization. With a sample of Indian banks, Ghosh (2007) documented that private banks also manage regulatory capital significantly.

## Hypothesis and Method

The field of research, a Canadian credit union movement, is a propitious environment for the study of GM's management of the reserve related to specific commercial loans. It is normal to believe that the management of the estimation could be more accentuated because of the limited possibilities of performing income management by other means. In fact, literature on the management of accounting earnings in banks generally recognizes the sale of securities as another means of opportunistically making gains or losses (Beatty *and al.*, 2002; Shrieves and Dahl, 2003). However,

managers of the LCU do not have the possibility to do so since their organisations do not possess this type of investment. Furthermore, GMs do not have any control over the general provision, which is calculated with the help of prescribed rates by the Federation[3] for each category of loans. Consequently, only the provision on the precise loans will be considered for management. Also, according to Liu and Ryan (2006), accounting earnings management is mainly done in the commercial sector since estimation of losses is more subjective. As a result, research interest has focused on the provision related to precise commercial loans.

## Dependent Variables

The dependant variable on which the hypotheses are tested is the provision related to precise commercial loans for the years 2007 and 2008 combined. Because of the different context of both years, the statistical analyses have also been performed individually on 2007 and 2008. The year 2007 has been particularly profitable for the movement, all of the LCU having attained the objective for the payment of a premium. On the other hand, the year 2008 has been hit by an economic crisis, resulting in a counter performance of close to half of the LCU. By means of comparison, the regressions using the model have also been practised on the provision related to precise consumer loans for the years 2007 and 2008 considered in a combined or isolated manner.

## Independent Variables (Research Hypotheses)

## The New GM

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[3] The LCUs in our population sample are all affiliated to a same network which is placed under the supervision of the Federation.

The big bath strategy consists in artificially increasing the expenses by over-stating the provisions. The opportunistic manager would use this strategy if he were able to hold the relative blame for losses to a cause without questioning the quality of his own work. Two examples of contexts pertaining to this type of behaviour are a negative environment for the whole industry and the arrival of a new manager who is just taking office. The new arriving managers are interested in proceeding with a big bath to reduce performance expectations. The new manager is in a good position to do so since he has the opportunity of re-evaluating the value of the loans downwards and then imputing the responsibility of these losses to his predecessor (Elliott and Shaw, 1998). Considering this, it is possible to put forward the hypothesis that the GM could prefer an over evaluation of the provision related to precise commercial loans during the first financial exercise for which he is accountable. A non significant or an opposite coefficient to the one that is expected may be explained by the presence of new GMs who are responsible for earlier decisions. As an example, these new managers could be the commercial account managers promoted inside LCU.

### Hypothesis 1
In the presence of a new GM who has arrived in his position during the financial exercise, the provision related to precise commercial loans tend to be over-stated.

## The GM of a LCU Having Not Attained the Threshold for Premium

Healy (1985) has successfully submitted and tested the hypotheses concerning the accounting earning management made by the managers of companies that did not attain the minimal threshold of performance permitting the right to a premium. The managers who find themselves in this situation would do well to over-state the provision related to precise commercial loans in the

hope that this over evaluation reverses during a year where it will allow him to attain the triggering threshold or increase his premium. An opposite result to the one expected regarding this hypothesis could be explained by the priority given to the regulatory capital management during difficult times (Shrives and Dahl, 2003; Krishman, 1999) or by a short-term strategy aiming to prevent dismissal (Barro and Barro, 1990). Behaving in this manner, managers' conduct would correspond to the one adopted in the smoothing hypothesis.

### Hypothesis 2
For the LCUs that miss the premium's triggering threshold, the provision related to the precise commercial loans tend to be over-stated.

## The GM of a LCU having attained the threshold for premium
According to Healy (1985), the managers of companies in which performance is within their progressive premium zone tend to operate an increasing accounting income management. The LCUs for which the performance surpasses the threshold will likely give premiums to their managers and to their employees. GM who find themselves within the premium progressive zone would be better off under-stating the provision related to precise commercial loans to maximise their premium.

### Hypothesis 3
For LCUs that attain the premium's triggering threshold, the provision related to precise commercial loans tend to be under-stated.

## The GM leaving his position

According to Dechow and Sloan (1991), the managers who are close to retirement would perform an increasing income management to maximize their premium. Many GMs are approaching the age of retirement. The Federation, which promotes fusions between the LCUs, invokes this situation as a facilitator element.

### Hypothesis 4

During the year prior to his departure, a GM tends to under-state the provision related to precise commercial loans.

## The surplus smoothing

The surplus smoothing consists in reducing discretionary expenses when the surplus is inferior to the expectations and increasing it in the opposite situation. In the banking sector, the over evaluation or the under evaluation of the LLE could be used with this aim in view.

Prior research concludes that less profitable banks will tend to over-state their relative profitability by under-stating their allowance for loan losses and conversely for more profitable banks. A positive coefficient on the earnings variables has been a robust finding in prior studies (Beaver and Engel, 1996).

In an income smoothing perspective, the GM may be tempted to smooth the excess payment according to the measure of central tendency of profitability for the LCUs associated with Federation or according to the previous year's LCU surplus.

### Hypothesis 5

The provision related to precise commercial loans is positively correlated with the difference between the surplus by $100 of the LCU's assets and the movement's average.

### Hypothesis 6

The provision related to precise commercial loans is positively correlated with the surplus difference by $100 of the LCU's assets between 2008 and 2007[4].

## The presence of a business services manager

The Federation encourages LCUs with an important commercial loans portfolio to hire a business services manager (BSM). The BSM acts as an intermediate between the GM and the commercial loan officers (CLO). The BSM is a well paid position, which gives the opportunity to recruit good candidates with solid experience in commercial credit.

The presence of a BSM indicates a professionalization that should be translated, in principle, by a decrease in actual losses on commercial loans. On the other hand, the BSM, which acts as an intermediate position between the GM and the CLO, is able to understand clearly the GM expectations with regard to surplus management and to watch over the work involving the commercial LLE accordingly. The BSM would do so in order to favour his remuneration and his career advancement following the Yes men theory (Prendergast, 1993). In such circumstances, the BSM should accentuate the management of the provision related to precise

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[4] Hypothesis 6 applies to the year 2008 considered in an isolated way. This hypothesis could not be tested for the years 2007 and 2008 combined and for the year 2007 because we did not have access to the data for the year 2006.

commercial loans. An opposite result to the one expected could be explained by the expertise and precision brought by the BSMs for the commercial LLE.

### Hypothesis 7
A positive (negative) relation is existent among the presence of a BSM and the provision related to precise commercial loans if we are in the presence of an over evaluation (under evaluation) of the said provision according to the Beaver and Engel (1996) model.

## Regulatory Capital
Literature review identifies many articles supporting the regulatory capital management by banks managers (Wahlen, 1994; Beaver and Engel, 1996; Ghosh, 2007). According to Liu *et al.* (1997), management would prevail with more intensity for the fourth quarter in banks that present a low ratio. Similar management could prevail in the LCU network because it is possible to think that the GMs be tempted to under-state the provision related to precise commercial loans in order to present a better capitalization ratio. In this case, GMs could win a good management reputation and a greater decision-making freedom, particularly concerning the loans authorizations.

According to the criteria applied by the organization in charge of supervising the operations of the GMs in order to protect the investors, the LCU is placed under observation with a capitalization ratio inferior to 7,5 % while a supervised recovery plan is required with a ratio inferior to 5 %. The GMs could perform the management of the provision related to precise commercial loans according to these thresholds in order to respectively avoid being placed under observation and placed under guardianship.

### Hypothesis 8

For the LCUs presenting a capitalization between 7.5 % and 8.5 %, the provision related to commercial loans tends to be under-stated.

### Hypothesis 9

For the LCUs presenting a capitalization between 5 % and 6 %, the provision related to commercial loans tends to be under-stated.

## The Agency Variables Measure (Variables Linked with Research Hypotheses)

Each hypothesis is tested with the inclusion of an independent variable into the prediction model of the provision related to precise commercial loans. All of the hypotheses, with the exception of those related to smoothing, are considered with the addition of a dichotomous variable. The variables that consider the smoothing in regard to the average movement performance and the one in regard to the previous year's LCU performance are measured by the gap between the surplus by $100 of assets and the same number for the average LCU performance and the previous year performance of the same LCU respectively.

## Control Variables

Beaver and Engel's (1996) proposes a four variables model to estimate the provision for non discretionary bad debts. On the basis of their sample, their model explains 94 % of the provision for bad debts that appear in the financial reports for the 1977-1984 period and 87 % for the 1985-1991 period. The independent variables in the Beaver and Engel model (1996) consist of: 1) net loan charge-offs, 2) outstanding loans, 3) nonperforming assets and 4) the one-year

ahead change in nonperforming assets. While this model has been developed a priori in order to estimate the nondiscretionary global provision (general provision and provision related to precise loans), it will firstly be validated on the provision related to precise commercial loans before adding to the agency variables. The same method will be used for the comparison regression on the provision related to precise loans and the provision related to precise consumer loans. Since the general provision is entirely nondiscretionary for the LCUs, the Beaver and Engel model (1996) should, in all logic, be applied to the provision related to precise loans. Furthermore, according to literature, there is nothing suggesting that the model could not serve to estimate the provision related to precise commercial loans and the provision related to consumer loans.

## The Model

The model for the hypotheses management of the provision related to precise commercial loans presented algebraically is as follows:

$$PRPCL = \alpha_0 + \alpha_1\,CO + \alpha_2\,LOAN + \alpha_3\,NPL + \alpha_4\,VARIMPC + \alpha_5\,NDG + \alpha_6\,M + \alpha_7\,D + \alpha_8\,QDG + \alpha_9\,LMR + \alpha_{10}\,LAP + \alpha_{11}\,RCS + \alpha_{12}\,RCT + \alpha_{13}\,(OVER)\,BSM + \alpha_{14}\,(UNDER)\,BSM + \alpha_{15}\,YEAR + u_1$$

PRPCL :     Provision related to precise commercial loans/ELL

ELL :       Net book value of common equity, plus total loan losses

CO:     Commercial loan charge-offs /ELL

LOAN :     Commercial loans outstanding/ELL

NPL :     Nonperforming loans /ELL

VARNPL :     One-period-ahead change in nonperforming loans/ ELL

NDG： New GM (Dichotomous variable taking the value of 1 if the GM has arrived in his position during the year).

M： Dichotomous variable taking the value of 1 if the performance of the LCU is inferior to the budgeted objective.

D： Dichotomous variable taking the value of 1 if the performance of the LCU is superior to the budgeted objective.

QDG： The GM manager has left his position the following year.

LMR： Difference between the LCU surplus by $100 of assets and the average profitability of the movement by $100 of assets.

LAP： Difference between the LCU's current surplus by $100 of assets and the same number for the previous year.

OVER： Dichotomous variable taking the value of 1 if the provision is superior to the predicted value by the Beaver and Engel model (1996).

UNDER： Dichotomous variable taking the value of 1 if the provision is inferior to the predicted value by the Beaver and Engel model (1996).

BSM： Dichotomous variable taking the value of 1 if the LCU has a BSM.

RCS： Dichotomous variable taking the value of 1 if the LCU has a capitalization ratio between 7,5 % and 8,5 %.

RCT： Dichotomous variable taking the value of 1 if the LCU has a capitalization ratio between 5 % and 6 %.

YEAR: Dichotomous variable taking the value of 1 if the observation is for 2008.

## Results and Analysis

The movement included 34 LCUs as of December 2007 and 31 as of December 2008. For the purpose of hypotheses tests, the two LCUs with a regulatory capital inferior to 5 % are excluded because their MLCs do not have the same influence on the commercial LLE. The size of the population is therefore reduced to 32 for the year 2007 and to 29 for the year 2008.

As of December 31st, 2007, the movement presented a loans portfolio of 2 161 million dollars in its cumulative balance sheet. The 32 LCUs composing our population had a portfolio of loans in average of 51,5 million dollars covering a range from 3,4 million dollars to 144,6 million dollars. The standard deviation of 34 million dollars is an indication of the large size difference between the LCUs. The doubtful loans and the provision related to precise loans are in average $381 000 and $168 000 respectively. Of the 2 161 million dollars in loans, 589 million dollars came from the commercial sector. The average portfolio for the LCUs is 15,3 million dollars. The extremes go from 0,4 to 58,1 million dollars with a standard deviation of 14 million dollars. On average, the doubtful debts is  $215 400, which make up 1,4 % of the portfolio. The average provision related to precise commercial loans is $86 600, which represents 0,57% of the outstanding loans in this category. The 32 LCUs show an average surplus of $0,97 by $100 assets, with a standard deviation of $0,36. In 2007, none of the 32 CLOs have functioned at a loss; the less performing one had a surplus of $0,11 by $100 assets. Each one of them had attained the performance threshold, giving the right to the payment of a premium. The average capitalization ratio is 8 % with a minimum of 5,1 % and a maximum of 10,8 %. Table 1 reports the descriptive statistics for 2007.

Table 1. Descriptive analysis of the data for 2007.

|  | N | Minimum | Maximum | Average |
|---|---|---|---|---|
| Loans portfolio | 32 | 3 359 463 | 144 680 210 | 51 479 432 |
| Doubtful loans | 32 | 1 224 | 1 358 799 | 380 871 |
| Provision on precise loans | 32 | 1 978 | 607 434 | 168 201 |
| Commercial loans portfolio | 32 | 393 539 | 58 121 775 | 15 273 214 |
| Doubtful commercial loans | 32 | 0 | 1 193 736 | 215 483 |
| Provision on precise commercial loans | 32 | 0 | 493 452 | 86 622 |
| Surplus by $100 assets | 32 | .11 | 2,01 | ,9722 |
| Capitalization ratio | 32 | .0510 | .080 | .080281 |

In 2008, the movement has registered a 77 million dollars increase of its loans portfolio, contributing to its reaching 2 238 million dollars. The commercial component has also progressed, from 589 million dollars in 2007 to 633 million dollars at the end of 2008. The average portfolio for the LCUs comprised in the population has increased because of the movement's general tendency, but also because of the fusions. As of December 31st 2008, the average loans portfolio stood at 61,2 million dollars. This represents a net progression comparatively to the 51,5 million dollars of the previous year. The commercial sector has evolved in the same way, going from an average portfolio of 15,3 million dollars for 2007 to 17,1 million for 2008. The portfolios' size dispersion is high because the standard deviation is 41 million dollars for the entire portfolio and 15,5 million dollars for the commercial component. The quality of the loans portfolio has deteriorated in 2008. The doubtful loans have passed from 0,74 % of outstanding loans in 2007 to 1,03 % in 2008. The provision related to precise loans has increased to 46 points of percentage to reach 0,79 %. The commercial loans portfolio, which is more sensitive to economic

cycles, shows ratios going in the same direction, doubtful loans being 2,64 % (1,4 % in 2007) and provision related to precise commercial loans adding up to 1,87 % (0,57 % in 2007). The 29 LCUs show an average excess payment of 0,34 by $100 assets, which is a net decrease compared to the $0,97 of 2007. For the year 2008, the standard deviation of surplus is $1,08. This important standard deviation indicates a large dispersion. Contrary to 2007, where all of the LCUs had been profitable, three of them have showed results in red ink and close to half of them (fourteen) have not been able to pay out a premium to their employees in 2008 because of their weak financial performance. The average regulatory capital ratio still has progressed to attain 8,6 %, a 0,6 % increase compared to 2007. Table 2 shows the descriptive statistics of 2008.

Table 2. Descriptive statistics of 2008

|  | N | Minimum | Maximum | Average |
|---|---|---|---|---|
| Loans portfolio | 29 | 3772494 | 144 468 800 | 611 95 316 |
| Doubtful loans | 29 | 22716 | 3 471 967 | 629 510 |
| Provision on precise loans | 29 | 7558 | 3 929 952 | 480 607 |
| Commercial loans portfolio | 29 | 362192 | 55 717 390 | 17 074 309 |
| Doubtful commercial loans | 29 | 0 | 3 471 967 | 449 978 |
| Provision on precise commercial loans | 29 | 0 | 2 522 676 | 319 919 |
| Capitalization ratio | 29 | ,0510 | ,1220 | ,086724 |
| Surplus by $100 assets | 29 | -3,61 | 1,86 | ,3445 |

## The Beaver and Engel Model (1996)

The Beaver and Engel model (1996) has been applied respectively to the provision related to precise commercial loans, to

the provision related to precise loans and to the provision related to consumer loans for the years 2007 and 2008 considered in a combined and individual manner[5]. All of the regressions have been significant at 99 %. These regressions are not subjected to an autocorrelation of the residues according to the Durbin-Watson statistic. Furthermore, the independent variables are not correlated according to the VIF (Variance inflation factor) statistic[6].

## The explanatory power of the agency variables in addition to the Beaver and Engel model (1996)

The adjusted $R^2$'s comparison between the models before and after the addition of the agency variables helps appreciate these variables' intake in order to explain the provision related to precise commercial loans, the provision related to precise loans, and the provision related to precise consumer loans. Table 3 helps demonstrate the variation of the adjusted $R^2$s after the addition of the agency variables.

When they are taken collectively, the agency variables associated to our hypotheses increase the adjusted $R^2$ to 11,7 % for the regression on the provision related to precise commercial loans considering the years 2007 and 2008 in a combined manner.

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[5] For the regressions for the year 2008, the variation of the doubtful loans is not considered since the data for the year 2009 was not available at the research time. Regarding the regressions on the commercial loans and the consumer loans, the variable for the removed loans is also omitted because the information in the financial reports does not detail the distribution of the removed loans between the two components.

[6] The agency variable Earning difference with the movement average and the agency variable Earning variation between 2007 and 2008 have been taken out of the model for the year 2008 due to a too large collinearity with other independent variables.

This increase approximately corresponds to a third of the non explained portion by the Beaver and Engel model (1996). This result indicates that the agency variables taken collectively have a significant added value and support the possible presence of management of the provision related to precise commercial loans.

Table 3. Increase in the predictive power of the Beaver and Engel model (1996) after the addition of the agency variables

| Predictive power of the model | Beaver and Engel model (1996) including a variable to take the year into account | The model with the agency variables | Increase of the adjusted $R^2$ |
|---|---|---|---|
| Provision cumulating the losses related to precise commercial loans in 2007 and 2008 | 73,4 % | 85,1 % | 11,7 % |
| Provision cumulating the losses related to precise commercial loans in 2007 | 79 % | 78,8 % | -0,2 % |
| Provision cumulating the losses related to precise commercial loans in 2008 | 91,1 % | 96,4 %[7] | 5,3 % |
| Provision cumulating the losses related to precise loans in 2007 and 2008 | 75,0 % | 83,7 % | 8,7 % |
| Provision cumulating the losses related to precise loans in 2007 | 88,2 % | 85,7 % | -2,5 % |
| Provision cumulating the losses related to precise loans in 2008 | 93 % | 97,3 %[5] | 4,3 % |
| Provision cumulating the losses to precise consumer loans in 2007 and 2008 | 75,4 % | 76,1 % | 0,7 % |
| Provision cumulating the losses related to consumer loans in 2007 | 98,2 % | 98,3 % | 0,1 % |
| Provision cumulating the losses related to precise consumer loans in 2008 | 99,3 % | 99,6 %[5] | 0,3 % |

The adjusted $R^2$ also increases for the two other regressions (precise loan and precise consumer loans) considering the years 2007 and 2008 in a combined manner. The adjusted $R^2$ progresses by 8,7 % on a non explained variation of 25 % for the provision related to 2007 and 2008 precise loans.

As for the provision related to precise consumer loans, the increase only adds up to 0.7 % on a non explained variation of 24,6 %. The management concentration for the commercial loans is in compliance with Liu and Ryan's results (2006).

## HYPOTHESES TESTING

### The New GM (hypothesis 1)

The first hypothesis says that a new GM over-states the provision related to precise commercial loans in order to create flexibility for the subsequent exercises. As the table 4 shows, the results for this hypothesis test are not conclusive. This hypothesis test shows that none of the coefficients are significant with a degree of confidence of over 90 %. Furthermore, the majority of the coefficients show a negative value, which is the opposite of what would be expected. For the two years that have been studied, the new GM variable does not seem to have any explanatory power in regards to the studied model for the LCUs that form the population.

The LCUs having missed (hypothesis 2) and having attained (hypothesis 3) the threshold for the performance premium

Hypotheses 2 and 3 have uniquely been tested for the year 2008, since all of the LCUs of the studied population have attained the threshold for the performance premium in 2007.

Table 4 The hypothesis for the new GM.

| New GM | Coefficients | Significant nature of the coefficients |
|---|---|---|
| Provision related to precise commercial loans for 2007 and 2008 | -0,008 | 0,818 |
| Provision related to commercial loans for 2007 | 0,006. | 0,710 |
| Provision related to precise commercial loans for 2008 | -0,017 | 0,708 |
| Provision related to precise commercial loans for 2007 and 2008 | -0,023 | 0,653 |
| Provision related to precise loans for 2007 | -0,017 | 0,422 |
| Provision related to precise loans for 2008 | -0,006 | 0,918 |
| Provision related to precise consumer loans for 2007 and 2008 | -0,004 | 0,852 |
| Provision related to precise consumer loans for 2007 | -0,007 | 0,239 |
| Provision related to precise consumer loans for 2008 | 0,003 | 0,634 |

The hypothesis test for the year 2008 has been made by coding the dichotomous variable by zero if the threshold had not been attained and by one in the opposite case. The coefficients and their significant nature presented in table 5 needs to be interpreted according to the control group (LCU having missed the threshold).

The coefficient associated to the hypothesis for the provision related to precise commercial loans is insignificant with a degree of confidence of 90 %. However, it would have been significant in the expected direction, which stood at a threshold of 80 %. For the purpose of comparison, the calculated coefficients for the precise loans and the precise consumer loans are also insignificant even if

the threshold would stand at 80 % and, in the case of the provision related to precise loans, the coefficient would be the opposite of what is expected.

Table 5 The hypotheses for the LCUs having missed and attained the threshold for the performance premiums.

| LCUs having missed and attained the threshold for the performance premiums | Coefficients | Significant nature of the coefficients |
|---|---|---|
| Provision related to precise commercial loans for 2008 | -0,027 | 0,186 |
| Provision related to precise loans for 2008 | 0,014 | 0,582 |
| Provision related to precise consumer loans for 2008 | -0,001 | 0,930 |

Indirectly, we can conclude that having been part of the control group, more precisely the LCUs having not attained the threshold for the premiums payment, does not significantly explain the amount of the provision cumulating the losses related to precise commercial loans for 2008. Accordingly, hypothesis 2 is not supported. These hypotheses state that losses are over-stated when the LCUs have not attained the threshold. In this circumstance, literature review highlights two sources of motivation for which the effects on the dependant variable are opposed. While over evaluation and the will to create provisions that can be reversed in the years where the threshold is attained go hand in hand (Healy, 1985), under evaluation is done when there is desire to reinforce the position of the GMs despite bad results (Barro and Barro, 1990). Confrontation between these two sources of motivation could explain the non significant nature of the hypothesis test for the attainment of the threshold for the premiums payment.

## GMs who have left their position (hypothesis 4)

The developed hypothesis concerning the GMs who have left their position says that the provision related to precise commercial loans can be under-stated in order to allow the GM to maximize his premium in the year preceding his departure. The results of the regressions performed, which are shown in table 6, do not validate the proposed hypothesis.

Table 6 The hypothesis concerning the GMs who have left their position.

| GMs having left their position | Coefficients | Significant nature of the coefficients |
|---|---|---|
| Provision related to precise commercial loans for 2007 and 2008 | -0,027 | 0,167 |
| Provision related to precise commercial loans for 2007 | -0,005 | 0,578 |
| Cumulating provision related to precise commercial loans for 2008 | 0,006 | 0,805 |
| Provision related to precise loans for 2007 and 2008 | -0,031 | 0,238 |
| Provision related to precise loans for 2007 | -0,006 | 0,516 |
| Provision related to precise loans for 2008 | -0,032 | 0,279 |
| Provision related to precise consumer loans for 2007 and 2008 | -0,018 | 0,123 |
| Provision related to consumer loans for 2007 | -0,006 | 0,045 |
| Provision related to precise consumer loans for 2008 | 0,000 | 0,935 |

Although the coefficients from the case in which the provision related to precise commercial loans tends to be going is the expected direction for the years 2007 and 2008 considered in a combined manner and for the year 2008 taken individually, none of them is significant at 90 %. The over evaluation of the provision related to precise commercial loans in the presence of a GM having left his position the following year then would not be supported for the LCUs who are part of the population for the years 2007 and 2008. However, it is interesting to point out that by adopting a degree of confidence of 80 %, the hypothesis would be accepted when considering the years 2007 and 2008 in a combined manner.

The regressions on the provision related to precise loans and the provision related to precise consumer loans show coefficients that are heading in the expected direction except for the ones linked to provision related to precise consumer loans, which post a value of zero. Furthermore, it is important to note that for the provision related to precise consumer loans for 2007 considered individually, the coefficient is significant with a degree of confidence of 95 %. We can therefore conclude that the GMs having left their position in 2008 would have under-stated the provision related to precise consumer loans in 2007. It is also important to note that the coefficient pertaining to the years 2007 and 2008 would have been significant with a degree of confidence of 80 %. This type of management, which consists of under-stating the amount of the provision, is likely to increase the performance premiums paid to the GMs in the year preceding their departure. The GM who acts this way also finds himself benefitting from a good reputation as a manager. This reputation could be very important to help find a new job (Prendergast, 1999) if he is removed as a result of a fusion.

## The surplus smoothing according to the movement's average (hypothesis 5)

The hypothesis pertaining to the smoothing of the surplus in relation to the average LCU performance requires that a GM will over-state (under-state) the provision related to precise commercial loans when the surplus of his LCU is superior (inferior) to the movement's average. If so, the expected coefficient should post a positive value. The variable related to this hypothesis has been eliminated from the regression for the year 2008 due to an excessive collinearity with the bad debts. The hypothesis has therefore only been tested for the years 2007 and 2008 taken globally and for the year 2007 considered individually. Table 7 presents the coefficients associated to the gap between the LCU surplus and the average of the movement and their significant nature.

Table 7 The smoothing of surplus hypothesis according to the movement's average.

| Smoothing of the surplus according to the movement's average | Coefficients | Significant nature of the coefficients |
|---|---|---|
| Provision related to precise commercial loans for 2007 and 2008 | -0,091 | 0,00 |
| Provision related to precise commercial loans for 2007 | 0,000 | 0,968 |
| Provision related to precise commercial loans for 2008 | Eliminated variable | S/O |
| Provision related to precise loans for 2007 and 2008 | -0,131 | 0,000 |
| Provision related to precise loans for 2007 | 0,008 | 0,516 |
| Provision related to precise loans for 2008 | Eliminated variable | S/O |
| Provision related to precise consumer loans for 2007 and 2008 | -0,018 | 0,051 |
| Provision related to precise consumer loans for 2007 | 0,001 | 0,808 |
| Provision related to precise consumer loans for 2008 | -0,030 | 0,322 |

The coefficient for the variable of the provision related to precise loans equation for 2007 considered individually is not significant. However, if we consider the combination of the years 2007 and 2008, the coefficient is significant with a degree of confidence of 99 %. The coefficient is however in the opposite direction of what was expected. It seems that for the years 2007 and 2008, we can associate the performance of a LCU according to the movement's average with the amount of the provision related to precise commercial loans. This relation would also exist for the provision related to precise loans with a degree of confidence of 99 %, and the provision related to precise consumer loans with a degree of confidence of 90 % when we consider the years 2007 and 2008 in a combined manner.

## The Surplus Smoothing According to The Previous Year (Hypothesis 6)

The hypothesis was uniquely considered for the year 2008 because of the availability of data concerning the surplus for the year 2006, which would have been essential for the calculation of the independent variable for the year 2007. It has been impossible to test the hypothesis for the year 2008 as well since this variable presented a strong colinearity with the bad loans and the bad commercial loans. Consequently, the variable has been cut from the model in order to assure the interpretation of the other agency variables.

## The Presence of a BSM (hypothesis 7)

The hypothesis on the presence of a BSM has been tested by introducing two agency variables, one for situations where the provision is over-stated and another for those where it is under-

stated. The expected relation was positive for the situations of over evaluation and negative for those of under evaluation since the hypotheses wished that the BSMs, according to the Yes men theory formulated by Pendergast (1993), behave in accordance to the explicit or implicit expectations of the GM. According to this theory, the subordinates subjected to subjective evaluations made by their superior have tendencies to adopt behaviours that are not likely of antagonizing the relationship. In the movement, the BSMs would then try to satisfy the GM. Table 8 presents the coefficients and their significant nature for the situations in which the provision is over evaluated.

Table 8 The hypotheses on the presence of a BSM – Cases where provision is over evaluated

| Presence of a BSM – Over evaluation of the provision | Coefficients | Significant nature of the coefficients |
|---|---|---|
| Provision related to precise commercial loans for 2007 and 2008 | 0,036 | 0,130 |
| Provision related to precise commercial loans for 2007 | 0,027 | 0,082 |
| Provision related to precise commercial loans for 2008 | 0,068 | 0,010 |
| Provision related to precise loans for 2007 and 2008 | 0,038 | 0,617 |
| Provision related to precise loans for 2007 | 0,027 | 0,336 |
| Provision related to precise loans for 2008 | 0,125 | 0,006 |

Table 8 shows that all of the coefficients are positive as expected by the research hypothesis. Moreover, the results for the provision related to precise commercial loans for the years 2007 and 2008 considered individually are significant with a confidence degree of 90 % and 99 % respectively. In these situations, the presence of a BSM would have amplified the management. By decreasing the level of confidence at 85 %, the result would also have been significant for the years 2007 and 2008 considered in a combined manner. These results leave the hypothesis of professionalization and independence likely of reducing management (Behrens, 1983), in plan. As for the provision related to precise loans in the presence of over evaluation, presence of BSM is only significant for the year 2008, and this, with a degree of confidence of 99 %.

Table 9 presents the results of statistical tests for situations in which the provision in the presence of a BSM is under evaluated.

Table 9 The hypothesis on the presence of a BSM – Cases where provision is under evaluated

| Presence of a BSM – Under evaluation of the provision | Coefficients | Significant nature of the coefficients |
|---|---|---|
| Provision related to precise commercial loans for 2007 and 2008 | -0,017 | 0,745 |
| Provision related to precise commercial loans for 2007 | No observation | ---- |
| Provision related to precise commercial loans for 2008 | 0,029 | 0,534 |
| Provision related to precise loans for 2007 and 2008 | -0,020 | 0,596 |
| Provision related to precise loans for 2007 | -0,013 | 0,373 |
| Provision related to precise loans for 2008 | -0,023 | 0,519 |

It was not possible to test the hypothesis pertaining to the effect of the presence of a BSM on the provision related to precise commercial loans for the year 2007 in the case of an under evaluation because there was no observation of a BSM and an under evaluation being present at the same time. The hypothesis is rejected for the years 2007 and 2008 combined and the year 2008 individually since no coefficient is significant with a confidence threshold of 90 %. The results for the provision related to precise loans are not significant either. The fact that the BSMs seem to collaborate for over evaluations but not for under evaluations is opposite to the results of Liu and Ryan (2006). They found that the subordinates collaborate easily while under-stating the losses because they see an advantage for the performance premium, but they also found that these subordinates would be recalcitrant to over-state to avoid the deceasing effect on their premium performance measurement.

## The Regulatory Capital (Hypotheses 8 and 9)

The formulated hypotheses for the regulatory capitalization ratios between 7,5 % and 8,5 % and between 5 % and 6 % are in effect only when this situation prevailed the previous year. In these cases, the provision related to precise commercial loans of the present year should be under-stated in a way that artificially increases capitalization in order to move away from the thresholds involving respectively the surveillance and the guardianship of the LCU. The results do not support research hypothesis 8 because none of the coefficients are significantly different from zero. In light of these results, it seems that no management of the provision involve LCUs close to the surveillance threshold. A possible explanation, inspired from Barro and Barro (1990), is that the GM would not want to play with fire by performing management of the provision in

fear that, if his strategy is discovered, he would not only lose LCU autonomy but also the supervising authorities' confidence. For comparison purposes, the effects of a capitalization ratio varying between 7,5 % and 8,5 % on the provision related to precise loans and on the provision on precise consumer loans have been analyzed. These results show that these effects are not significant. Table 10 shows results concerning the hypothesis that tests the capitalization ratio between 7,5 % and 8,5 %.

Table 10 Hypothesis 8 on the regulatory capital ratio of the previous year between 7,5 % and 8,5 %

| Regulatory capital ratio between 7,5 % and 8,5 % | Coefficients | Significant nature of the coefficients |
|---|---|---|
| Provision related to precise commercial loans for 2007 and 2008 | 0,006 | 0,717 |
| Provision related to precise commercial loans for 2007 | -0,004 | 0,619 |
| Provision related to precise commercial loans for 2008 | 0,005 | 0,796 |
| Provision related to precise loans for 2007 and 2008 | 0,016 | 0,480 |
| Provision related to precise loans for 2007 | 0,000 | 0,606 |
| Provision related to precise loans for 2008 | -0,006 | 0,817 |
| Provision related to precise consumer loans for 2007 and 2008 | 0,005 | 0,652 |
| Provision related to precise consumer loans for 2007 | -0,002 | 0,425 |
| Provision related to precise consumer loans for 2008 | -0,001 | 0,741 |

The results also do not support research hypothesis 9 since none of the coefficients are heading towards the expected direction. Furthermore, the coefficient associated with the provision related to precise commercial loans for 2008 is significant at a 99 % confidence

degree. Its significant nature indicates that the LCUs having a regulatory capitalization ratio varying between 5 % and 6 % in 2007 would have over-stated the provision related to precise commercial loans in 2008. This over evaluation in 2008 could be explained by a big bath strategy wanting to scapegoat the unfavourable economic context. The results of the regulatory capital ratio varying between 5 % and 6 %'s effects on the provision related to precise loans and on the provision related to precise consumer loans are also calculated. These results indicate that these effects are only significant (95 %) for 2008's precise consumer loans. The positive coefficient involves an over evaluation of the provision.

Table 11 Hypothesis 9 on the regulatory capital ratio of the previous year ranging between 5 % and 6 %

| Regulatory capital ratio | Coefficients | Significance character of the coefficients |
|---|---|---|
| Provision related to precise commercial loans for 2007 and 2008 | 0,017 | 0,516 |
| Provision related to precise commercial loans for 2007 | 0,011 | 0,737 |
| Provision related to precise commercial loans for 2008 | 0,327 | 0,000 |
| Provision related to precise loans for 2007 and 2008 | 0,004 | 0,898 |
| Provision related for precise loans for 2007 | 0,030 | 0,727 |
| Provision related to precise loans for 2008 | 0,070 | 0,434 |
| Provision related to precise consumer loans for 2007 and 2008 | -0,004 | 0,777 |
| Provision related to precise consumer loans for 2007 | -0,004 | 0,352 |
| Provision related to precise consumer loans for 2008 | 0,003 | 0,011 |

This result is consistent with the one observed for commercial loans in 2008 and, consequently, supports the big bath. Table 11

shows the discussed results concerning the hypotheses tests in regards to the regulatory capitalization ratio ranging between 5 % and 6 %.

## CONCLUSIONS

### The Results

The results show that the agency variables taken collectively increase the predicting power of the Beaver and Engel model (1996) significantly for the year 2008 taken individually and for the years 2007 and 2008 considered in a combined manner. As for the variables taken individually, only the hypothesis for the cases where there is an over evaluation of the provision related to precise commercial loans in the presence of a BSM for the years 2007 and 2008 considered individually have received the empirical support with a degree of confidence superior to 90 %. For these precise situations, the BSMs have contributed in the over-statement of the amount of the provision. They could have behaved this way in order to satisfy the expectations of the GM.

Another result, even though it is not significant with a 90 % confidence degree, deserves to be mentioned. In fact, it is interesting to note that all of the coefficients associated to this departure of the GMs were negative, which leads to the under-stating of the provisions and, consequently, favours the payment of a higher premium related to the performance of the year before departure. Therefore, if we consider the provision related to precise commercial loans, the hypotheses would have been accepted for the years 2007 and 2008 taken in a combined manner with a degree of confidence of 83 %. In the same direction, the regression for the year 2007 with the dependent variable provision related to consumer loans highlights a significant coefficient of 95 %.

The agency variable of the surplus smoothing relating to the movement's average has shown significant, but found itself in the opposite direction of the research hypotheses for the provision related to precise commercial loans for 2007 and 2008. Consequently, within the movement, the over or under performance of a LCU could be explained by the provision related to precise commercial loans' importance.

## The Model's Development

The research's practical purpose is to try to understand whether the estimation of the provision related to precise commercial loans is subjected to management by the GMs and, if possible, to identify the motivational sources resulting in such management. The method chosen to answer this research question is based on the use of the Beaver and Engel model (1996) to estimate the non discretionary portion of the provision related to precise commercial loans. It is an innovative use on two aspects: 1) application to a credit union movement and not to banks and 2) application to the commercial portion of the provision and not to the provision considered globally. In terms of management issues, the model has been enriched to take in account some agency variables that could likely explain the discretionary portion of the provision.

## The Beaver and Engel Model's (1996) Applicability to Credit Cooperatives

The Beaver and Engel model (1996) is recognized in literature for determining the nondiscretionary portion of the provision for bad debts in the banking sector. Research results demonstrate that it can also be applied to a credit union movement in order to explain the provision related to precise commercial loans, the provision related to precise loans, and the provision related to precise consumer loans. The model remains effective even when we

eliminate some variables such as for the regressions of the commercial loans for 2007 and consumer loans for 2007, which omit the loan charge-offs, and for the regressions for the year 2008, where the variation of nonperforming loans between 2009 and 2008 could not be taken into account because of the 2009 LCUs financial reports' unavailability. The current nonperforming loans, emerging constantly as being the most significant, seem to be the only ones indispensable to the application of the model.

## The Addition of Agency Variables to The Beaver and Engel Model (1996)

The agency variables introduced in this research increase the explaining power of the Beaver and Engel model (1996). In these conditions, eventual research on the provisions related to precise loans, as much as for commercial loans or consumer loans components, should consider agency variables. Table 12 shows the observed increase of the adjusted $R^2$ for each of the three regressions made for the years 2007 and 2008 considered in a combined manner.

In contrary to the majority of research studies that concentrate on the provision for bad debts, the present one study the provisions related to precise loans in a global manner and its commercial and consumer components. This refinement helps to consider more precise situations by admitting that management of general provision and specific provision are made in a different manner. According to Liu and Ryan (2006), the management of the general provision is an administrative decision demanding no collaboration from the loan officers, contrarily to the provision on precise loans, which requires the implication of personnel taking part in LLE.

Table 12 Comparison of the model's explaining power before and after the introduction of the agency variables.

| | $R^2$ adjusted before the introduction of agency variables | $R^2$ adjusted after the introduction of the agency variables | Variation |
|---|---|---|---|
| Provision related to precise loans for 2007 and 2008 | 0,750 | 0,837 | 0,087 |
| Provision related to commercial loans for 2007 and 2008 | 0,734 | 0,851 | 0,117 |
| Provision related to precise consumer loans for 2007 and 2008 | 0,754 | 0,761 | 0,007 |

In addition, always according to Liu and Ryan (2006), the commercial loans would be more heterogeneous and more subjected to management. Their isolation, for analysis purposes, helps increase the possibility to identify situations in which a management exists since the evaluation of the provisions on these loans would be more subjective than those involving consumer loans.

## Future Directions

Research opens the door to many other research projects that could complete the knowledge on provision management related to precise commercial loans in the context of LCU. Two future directions seem particularly promising: 1) the evaluation of the motivational sources implying LLE management and 2) the understanding of the role of the BSMs and the commercial loan officers in LLE management.

## The Identification of the Precise Motivational Sources

In addition to certain indications of the management of provisions the year preceding the departure of a GM, research has not been able to conclusively identify the proper motivational sources of the GM causing a management related to precise commercial loans loss estimation. To identify the precise motivational sources, the analysis could be refined by distinguishing the situations where a source of motivation should prevail.

## The Role of the BSMS and Commercial Loan Officers

In the movement, the LLE's determination of the commercial loans provision contained in the financial statements is established firsthand by the commercial loan officers. It is then revised by the BSM (if this position exists) and by the GM. The GM therefore interacts with the BSMs and the commercial loan officers when they execute the management of the measure of the provision related to precise commercial loans. Given the results concerning the hypothesis tests on the GM's source of motivation, it would be interesting to investigate the interactions between the GMs, the BSMs, and the commercial loan officers in order to verify whether the GMs' ascendency on the BSMs and the commercial loan officers eliminates their discretionary power or their capacity to influence the amount of the provision.

## REFERENCES

Takeda, C. and Thomas, S., Bank Loan Loss Provisions: A Re-Examination of Capital Management, Earnings Management and Signalling Effects, *Journal of Accounting and Economics*, 28, 1999, 1-25.

Barro, J.R. and Barro, R.J., Pay, Performance and Turn-over of Bank CEOs, *Journal of Labor Economics*, 4, 1990, 448-481.

Elliott, J.A. and Finn, M.W., Market Rewards Associated with Patterns of Increasing Earnings, *Journal of Accounting Research*, 2, 1999, 387-413.

Beatty, A. and Petroni, K., Earnings Management to Avoid Earnings Declines Across Bublicly and Privately Held Bank, *The Accounting Review*, 3, 2000, 547-570.

Beaver, W. and Engel, E., Discretionary Behaviour with Respect to Allowances for Loan Losses and the Behaviour of Security Prices, *Journal of Accounting and Economics*, 22, 1996, 177-206.

Behrens, R., Commercial Problem Loans: How to Identify, Supervise, and Collect the Problem Loan, *Banker s Publishing Company, Boston*, 1983, 224.

DeAngelo, L., Managerial Competition, Information Costs and Corporate Governance: The Use of Accounting Performance Measures in Proxy Contests, *Journal of Accounting and Economics*, 1, 1988, 3-36.

Dechow, P. and Sloan, R., Executive Incentives and the Horizon Problem, *Journal of Accounting and Economic*, 1991, 51-89.

DeFond, L. and Park, W., Smoothing Income in Anticipation of Future Earnings, Journal of Accounting and Economics*, 23, 1997, 115-139.

Deschênes, S., Loan Loss Estimation Management by Financial Institution Managers and Commercial Loan Officers, *Journal of Performance Management,* 3, 2008, 16-31.

Elliott, J. and Shaw W., Write-Offs as Accounting Procedures to Manage Perceptions, *Journal of Accounting Research*, 26 , 1988, 91-126.

Fonseca, A. and Gonzalez, F., Cross-Country Determinants of Bank Income Smoothing by Managing Loan-Loss Provisions, *Journal of Banking & Finance*, 2, 2007, 217-228.

Ghosh, S., Loan Loss Provisions, Earnings, Capital Management and Signalling: Evidence from Indian Banks, *Global Economic Review*, 2, 2007, 121-136.

Greenawalt, M. and Sinkey, J.,(1988). Bank Loan-Loss Provisions and the Income-Smoothing Hypotheses: An Empirical Analysis, *Journal of Financial Services Research*, 1, 1988, 301-318.

Healy, P.M., The Effect of Bonus Schemes on Accounting Decisions., Journal of *Accounting and Economics*, 7, 1985, 85-107.

Kim, M.S. and Kross, W., The Impact of the 1989 Change in Bank Capital Standards on Loan Loss Provisions and Loan Write-offs, *Journal of Accounting and Economics*, 25, 1998, 69-99.

Lys, T. and Vincent, L., Empirical Research on Accounting Choice, *Journal of Accounting and Economics*, 31, 2001, 255-307.

Levinthal, D., A Survey of Agency Models of Organizations, *Journal of Economic Behavior and Organization,* 9, 1988, 153-185.

Liu, C. and Ryan, G., Income Smoothing Over the Business Cycle: Changes in Banks' Coordinated Management of Provisions for Loan Losses and Loan Charge-offs from the Pre-1990 Bust to the 1990s Boom, *The Accounting Review*, 2, 2006, 421-441.

Liu, C. and Ryan, G. et Wahlen, J. M., Differential Valuation Implications of Loan Loss Provisions Across Banks and Fiscal Quarters*, The Accounting Review*, 1, 1997, 133-146.

McNichols, M. and Wilson, P., Evidence of Earnings Management from the Provision for Bad Debts, *Journal of Accounting Research*, 26, 1988, 1-31.

Prendergast C., The Provision of Incentive in Firms. *Journal of Economic Literature*, 1, 1999, 7-63.

Prendergast C., A theory of "Yes Men". *The American Economic Review*, 4, 1993, 757-770.

Scott, W.R. Financial Accounting Theory. Toronto : Pearson Prentice
    Hall (4e éd.), 2006.
Shrieves, R. E. and Dahl, D., Discretionary Accounting and the
    Behaviour of Japanese Banks under Financial Duress, *Journal
    of Banking and Finance*, 27, 2003, 1219-1243.
Wahlen, J. M., The Nature of Information in Commercial Bank
    Loan Loss Disclosure. *The Accounting Review*, 3, 1994, 455-
    478.