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# Institutional investors, corporate governance, and earnings management around merger: evidence from French absorbing firms

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ABSTRACT

This paper examines the association between institutional ownership and the earnings management behavior of some French absorbing firms. Using a sample of 76 French mergers and absorptions concluded over the period ranging from 2000 to 2010, we undertake to present some empirical evidence highlighting that absorbing-firms manipulate earnings relevant to the year preceding the merger-offer in the presence of institutional cross-holding. However, the presence of active institutions turns out to limit the managerial accruals discretion. The monitoring role exerted by the active-institutional investors does restrict the opportunities of earnings management around mergers and acquisitions. Further analyses suggest that the average value of discretionary accruals with regards to the absorbing firms proves to be influenced by the nature of merger deal (takeover vs. restructuring).

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## Inversores institucionales, gobierno corporativo y gestión de los resultados alrededor de una fusión: el caso de las empresas absorbentes francesas

RESUMEN

En este trabajo se estudia la relación entre la propiedad institucional y el comportamiento de la gestión de las ganancias de algunas empresas absorbentes francesas. Utilizando una muestra de 76 fusiones y absorciones francesas celebradas durante el período que va desde 2000 a 2010, nos comprometemos a presentar destacada evidencia empírica de que las empresas absorbentes manipulan los ingresos correspondientes al año anterior a la fusión en presencia de participaciones institucionales cruzadas. Sin embargo, la presencia de instituciones activas resulta en una limitación de la discreción administrativa. La función de supervisión ejercida por los inversores institucionales activos restringe las posibilidades de gestión de ingresos alrededor de las fusiones y adquisiciones. Otros análisis sugieren que el valor medio de discrecionalidad con respecto a las empresas que absorben demuestra ser influenciado por la naturaleza del acuerdo de fusión (adquisición vs. reestructuración).

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## 1. Introduction

Further to their increasing presence in the financial markets, institutional investors have become the subject matter of several academic papers. The majority of the conducted studies have tried to treat the role carried out by these actors in their respective

companies, highlighting their contribution in creating shareholder value. In this context, several studies have made it clear that it is uncertain for most of the institutional investors to behave in the same way. Indeed, they assert the existence of different types of institutional investors who differ according to the business characteristics and objectives they undertake (Ruiz-Mallorqui & Santana-Martin, 2011). This theoretical finding has been well explained by the hypothesis of institutional investors' heterogeneity behavior (e.g., Brickley, Lease & Smith, 1988; Dong & Ozkan, 2008; Duggal & Millar, 1994; Gillan & Starks, 2003; Ruiz-Mallorqui & Santana-Martin, 2011; Wang & Zhang, 2009). Actually, the control

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behavior exercised by such shareholders is not unique and precise; it is, rather, heterogeneous and complex (Ben M'Barek, 2003).

Recent studies dealing with institutional investors and their impact on accounting choices have predominantly focused on the latter's contribution to control the opportunist managerial practices. Noteworthy, however, the theoretical and empirical contributions related to this area of research are very controversial. In fact, while Koh (2003, 2007), Ben Kraiem (2008), Jarboui and Njah (2010), find that institutional investors are playing an active role in monitoring and disciplining managerial discretion, other empirical studies suggest that this institutional type of ownership is likely to increase the managerial incentives to adopt an aggressive earnings-management strategy (e.g., Cheng & Reitenga, 2001; Koh, 2003; Lipson, Kedia & Burns, 2006; Koh, 2007).

Owing to these ambiguities and to the difficulty of identifying the control behavior of institutional investors, we have reckoned it interesting to study the institutional investor's control behavior in an incentive context of earnings management. In this paper, we tend to examine the relationship between institutional investors and earning-management behavior with respect to some French merger and acquisition undertaking. More specifically, we investigate, on the one hand, to what extent the institutional investor's control behavior can affect the acquiring firm's accounting policy. On the other hand, we tend to analyse the acquiring firm's major determinants of earnings management.

Using a sample of 76 French mergers and absorptions occurring over the period 2000-2010, the results show that the absorbing firm's tend to manipulate the earnings relevant to the year preceding the merger offer. In addition, the achieved results indicate that the absorbing firms' upwards earnings management proves to be positively influenced by institutional cross-holding and the existence of a pre-bid toehold shareholding by bidding companies. However, the presence of active institutions decreases the level of discretionary accruals of the absorbent companies.

The remainder of this paper is organized as follows. Section 2 is devoted to develop the paper's hypothesis. As for section 3, it contains the research methodology (variable measurements, research design, and samples applied). In section 4, the empirical results are exposed, while section 5 depicts the conclusion.

## 2. Hypothesis development

### 2.1. The absorbent company's accounting politics: earnings anagement hypothesis

Financial and accounting literature is rich and unanimous as to the validity of earnings-management hypothesis pertaining to mergers and acquisitions (e.g., Erickson and Wang, 1999; Gong, Louis & Sun, 2008, Groff & Wright, 1989; Higgins, 2013, and Louis, 2004). This hypothesis predicts that the acquiring firms manage their earnings during the period prior to the merger offer.

In the context of mergers and acquisitions, earnings management can be viewed as either opportunistic or beneficial. In this regard, Jiraporn, Miller, Yoon and Kim (2008) suggest that earnings management may seem beneficial as it potentially enhances the informative-value of earnings.

Managers of the acquiring firms may exercise managerial discretion over earnings to communicate private information to current and potential investors. It is intended to reflect their investment opportunities and future growth in order to affect the perception of initiator shareholders and those of the target companies about the quality of the merger offer.

In general, an opportunistic earnings management undertaken by acquirer may have two major explanations. On the one hand, it serves to conceal the managerial entrenchment strategy (André,

Ben-Amar & Lain, 2003). Entrenched managers will be incited to manipulate earnings in order to enhance the entrenchment policies through merger and acquisition bids. On the other hand, the acquiring firms' upward earnings management would tend to reduce the exchange ratio (Boutant, 2011; Higgins, 2013). In this context, Erickson and Wang (1999) find that bidder managers manage earnings in such a way as to affect the exchange ratio, stock dilution and target-acquisition cost.

The hypothesis of earnings management prior to the mergers and acquisitions is also valid in the specific context of merger and absorption transactions (e.g., Boutant, 2010; Djama & Boutant, 2006; Nasfi & Albouy, 2011). In this specific context, we tend to examine the relationship between institutional investors and earning-management behavior.

### 2.2. Institutional ownership and earnings management incentives

For the purpose of examining the institutional investors' ability and incentives to monitor earnings management, we reckon to divide institutions into "transient" and "dedicated" groups, in conformity with the research line of Brickley et al. (1988), Duggal and Millar (1994), Bushee (1998), Almazan, Hartzell and Starks (2005), Velury and Jenkins (2006), Dong and Ozkan (2008), Ferreira and Matos (2008), Bhattacharya and Graham (2009).

#### 2.2.1. Transient institutional investors

Dong and Ozkan (2008), note that the transient institutions are but institutional investors who buy and sell their investments very frequently and exhibit a high portfolio turnover. These institutions are characterized by adopting a short investment horizon (Jarboui and Olivero, 2008) and indexing objectives (Elyasiani and Jia, 2010). They often choose to follow the "Wall Street Rule". In fact, transient institutional investors are not directly involved in corporate management decisions. Once dissatisfied with the firm's management or stock-market performance, they simply adopt an exit policy by selling their stakes (Tsai and Gu, 2007). Indeed, they are willing to give up their managerial control-decision rights for the sake of profiting from liquidity advantages of their portfolios. Such a detachment from the control activity can be qualified as being synonymous of passivity (Ben Kraeim, 2008).

In this respect, Bushee (2001) highlights that transient institutional investors most often exhibit a strong preference for short-term earnings. It is actually this excessive focus on current earnings that entices firm managers to manage earnings upwards (Koh, 2003). In fact, these investors are ready to encourage managerial opportunistic practices if they generate significant abnormal returns. More recent studies have shown that the presence of institutional investors is likely to further increase incentives to earnings management. For instance, Koh (2007) predicts a positive association between transient institutional ownership and income-increasing earnings management. In consistence with this empirical evidence, Cheng and Reitenga (2001), Koh (2003) and Lipson et al. (2006) report that institutional ownership is highly associated with income increasing accruals.

Regarding the existing literature, it suggests that some institutional investors do have a certain business relationship with some firms. Such institutions are, generally, less likely to oppose managerial decisions, thus impeding, their effective monitoring-managerial discretion. Consequently, managers tend to have more liberties of commitment in mergers and acquisitions even though they may not create enough value. The neutrality of transient institutional investors with regards to a merger long-run profitability is explained by their preference to abandon their control rights in favor of consolidating the diversification and liquidity advantages.

In the context of mergers and absorptions, the absorbing-company executives are more able to manage earnings upwards in the period

prior to a merger offer during the existence of transient institutional ownership. This theoretical evidence has its justification in two major arguments. Firstly, these transactions favor the primary objective of maximizing the shareholder's value further to achieving positive abnormal returns when announcing the absorption offer (Comblé & Heldenbergh, 2002). Secondly, such a specific accounting strategy complies with near-term earnings preference adopted by transient institutional investors. This set of arguments support the following hypothesis stipulating that:

**H1.** Absorbent firms are more incited to manage earnings upwards during the year preceding a merger in presence of transient institutional ownership.

### 2.2.2. Dedicated institutional investors

Dedicated institutional investors are characterized as being long-term oriented investors with a desire to invest in a firm which creates a long-run value. In this context, previous research works (e.g., Brickley et al., 1998; Bushee, 1998; Chen, Harford & Li, 2007; Hartzell & Starks, 2003; Ramalingegowda & Yu, 2012; Sahut & Gharbi, 2010) have suggested that institutions that have long-investment horizons and concentrated-share focused holdings are most likely to monitor managers. Indeed, they enjoy the power, resources and incentives necessary to engage in control-related events such as takeovers, restructuring activities, as well as mergers and acquisitions (e.g., Elyasiani & Jia, 2010; Kim, Kim & Kwon, 2009; Ould Daoud Ellili, 2009). Using a sample of 350 U.S. mergers and acquisitions occurring over the period 1999-2005, Bethel, Hu & Wang (2009) have provided some evidence highlighting that institutional shareholders with concentrated-bidder stakes may vote against merger proposals once they feel they are misguided.

In consistency with this line of argument, institutional investors are more likely to monitor and discipline managers, ensuring that the latter tend to choose investment decisions in a bid to maximize firm value rather than to meet short-term earnings goals (Bushee, 1998).

Through their monitoring activities, dedicated-institutional investors are likely to constrain the accruals discretion available to and exercised by acquirer managers. The presence of these institutional investors has also been discovered to mitigate managerial incentives to manipulate earnings. This evidence may be explained by their capacity to analyze and interpret financial statements' content effectively. Utama and Siregar (2008) have noted that sophisticated investors can have access to more information from other sources, more timely information, and are also more capable of decomposing earnings into discretionary and non-discretionary components.

In this context, several studies have discovered that institutional ownership is associated with less income increasing discretionary accruals (e.g., Rajgopal & Venkatachalam, 1998; Cheng & Reitenga, 2001; Koh, 2003; Koh, 2007; Ben Kraiem, 2008; Djerbi & Jarboui, 2012). These results support the competing view that institutional investors play an active role in monitoring and disciplining managers and their presence reduces, as well, managerial incentives to adopt aggressive earnings-management strategies. In this regard, we expect that the monitoring role exercised by dedicated-institutional investors is likely to restrict earnings management with regards to mergers and absorptions. Hence, the following hypothesis can be advanced:

**H2.** Absorbent firms are less incited to manage earnings upwards during the year preceding a merger in presence of dedicated-institutional ownership.

### 2.2.3. Institutional cross-holding

In the specific context of mergers and acquisitions, institutional investors can hold equity stakes in both the bidder and target companies. This case denotes the presence of institutional cross-holding. On examining merger's voting-behavior of these

institutions, Matvos and Ostrovosky (2008) have assumed that their voting behavior highly depends on the returns achieved around merger the announcements. They show that the acquiring companies' institutional shareholders do not, on average, lose money around merger announcements, because they hold substantial stakes in the targets and would make up for the potential losses with the gains to be made from the target. With reference to these empirical results, it appears that, for an institutional cross-ownership, the merger is considered as a zero-sum game. It is merely a simple transfer of wealth from the acquiring-companies' shareholders to the target-companies' shareholders. In this regard, Bethel et al. (2009) add that institutional investors holding equity stakes in both bidders and targets may try to maximize their overall holdings' value around the agreement dates of mergers. Likewise, they could benefit from earnings management practices if they fail to realize abnormal returns during the merger offer. Indeed, these manipulative practices represent for them a means of maximizing the profitability of their portfolio.

Independently of the merger quality and its long-run profitability, it is more likely for an institutional cross-holding to behave as a free-riding than as an active shareholding. Actually, this free-rider problem would certainly discourage the monitoring activities, which, consequently, increases the earnings management opportunities around mergers and absorptions. These developments lead us to put forward the following hypothesis:

**H3.** Absorbent firms are more incited to manage earnings upwards in the period preceding a merger with the presence of institutional cross-ownership.

## 2.3. Earnings management major determinants

### 2.3.1. The stat of pre-bid ownership in the target companies

In this elaborated study, Henry (2004) has examined the influence of bidder toehold on the outcome of takeover bids occurring in Australia between 1991 and 2000. He has shown that the probability for a takeover to succeed increases in the case when bidders have a larger toehold position in the target companies at the time of bid announcement. According to this evidence, one can state that a hostile-takeover bid many become a friendly takeover should there be a cross-holding toehold between the bidder companies and the target one. Actually, this merely requires a simple restructuring activity to be undertaken within the group. In the specific context of mergers and acquisitions, an opportunistic earnings management does not seem to have a great interest. As matter of fact, the acquiring firms have less incentive to manage earnings in such a way as to affect the merger-generated outcome. In this context, Boutant (2011) confirms that the absorbing firms' upwards earnings management is influenced by certain contextual factors related to the characterizing features of French mergers characteristics such as nature of the mergers deals (common control vs. control absence). She finds that the incentives for earnings management turn out to be less (more) pronounced when the mergers are undertaken among entities under common control (absence of control). So, based on these results, the absorbent firms are more (less) incited to manage earnings upwards in the period preceding a merger if the operation is led between entities under different control (common control).

### 2.3.2. Merger's auditing quality

Several studies have been dedicated to examining the association between audit quality and earnings management. They thoroughly provide both theoretical and empirical evidence that firms' discretionary accruals audited by Big-X auditors<sup>1</sup> are less discreet

1. Big-X auditors refer to the top-tiers auditors. In particular, Big-8 (1985-1989), Big-6 (1990-1997), Big-5 (1998-2002) and Big-4 (after 2002).

than those of firms audited by non-Big X (e.g., Becker, DeFond, Jiambalvo & Subramanyam, 1998; Chen, Lin & Zhou, 2005; Francis, Maydew & Sparks, 1999; Zhou & Elder, 2002). Ding and Jia (2012) add that the clients of big-X auditors present lower levels of absolute discretionary accruals and the earnings' relevance value has noticed a significant increase. In addition, Krishnan (2003) finds that discretionary accruals in firms audited by Big-X have a higher positive relationship with future profitability than those of firms audited by non-Big X auditors. These results well demonstrate that auditing plays a significant role in constraining opportunistic earnings management. Thereby, managers are less likely to implement their accounting discretion to manage earnings during the period preceding the merger offer than when their firms are audited by Big-X. In this specific context, Djama and Boutant (2006) have highlighted the presence of a negative association between discretionary accruals and the presence of a well-qualified merger auditor. Following these developments, it seems that absorbent firms have less incentive to manage earnings following the control exercised by the merger auditor. Hence, the absorbent firms are less motivated to manage earnings upwards in the period preceding a merger in the presence of a high-quality merger auditor.

### 2.3.3. Merger-payment method

The financial and accounting literature has recently accorded a noticeable attention to the choice of payment method appropriately fit to corporate takeovers (e.g., Harris, Madura & Glegg, 2010; Louis, 2004; Myers & Majluf, 1984; Shleifer & Vishny, 2003; Sudarsanam, 1995).

In this relevant literature, the bidder has the capacity to choose between three payment methods: cash payments, mixed payments or stock payments.

In this respect, Myers and Majluf (1984) suggest that bidders usually use their stock to finance takeovers once they are overvalued in the financial market. Moreover, Henry (2004) adds that the use of equity as a payment method increases the uncertainty about the bid value and the likely gains to be acquired following a bid acceptance. In fact, the choice of payment method is justified by the bidders' willingness to share with the target shareholders the inability risks of achieving the expected synergies. For this reason, Fishman (1989), Sudarsaman (1995) and Henry (2004) have concluded that cash-based bids prove to have a more highly significant probability of success than do bids involving a pure-equity or part-equity consideration. According to this evidence, one can state that the acquiring firms which use stock as a means to finance mergers and acquisitions are more incited to manage earnings upwards in the period prior to a bid for the stake of affecting the mergers' outcome.

Consequently, the bidding firms would aim, in this case, at convincing the target firms of the takeover-bids' quality. In this context, Erickson and Wang (1999), Louis (2004), Gong et al. (2008), Botsari and Meeks (2008), as well as Higgins (2013) jointly confirm the earnings management hypothesis with regards to stock-financed mergers. Yet, this hypothesis is not validated with respect to the cash-financed merger-bid case. Based on these developments, the absorbent firms are more incited to manage earnings upwards in the pre-merger period once equity is used as a payment method.

## 3. Research methodology

This section is devoted to we discuss the empirical methodology applied to test the already-developed hypotheses.

### 3.1. Variable measurement

#### 3.1.1. Measuring the dependent variable: earnings management

In consistency with several previously-elaborated studies, discretionary accruals have been selected, in this research, as

a means to measure the earnings management (e.g., Cohen and Zarowin, 2010; Gong et al., 2008; Hadani, Goranova & Khan, 2011; Higgins, 2013; Louis, 2004; Teoh, Welch & Wong, 1998). More specifically, accruals have been assessed via the following three models:

- Modified Jones model: Dechow, Sloan and Sweeney (1995)

$$TA_{it}/A_{it-1} = \beta_0(1/A_{it-1}) + \beta_1((\Delta REV_{it} - \Delta REC_{it})/A_{it-1}) + \beta_2(PPE_{it}/A_{it-1}) + \varepsilon_{it}$$

where, for fiscal year  $t$  and firm  $i$ ,  $TA$  represents the total accruals defined as the difference between earnings and operating cash flows,  $A_{it-1}$  represents the total assets in  $t-1$ ,  $\Delta REV_{it}$  is the change in revenues from the preceding year ( $REV_t - REV_{t-1}$ ),  $\Delta REC_{it}$  is the change in net accounts receivables from the preceding year ( $REV_t - REV_{t-1}$ ), and  $PPE_{it}$  stands for the gross value of property, plant and equipment.

- Model of Kothari, Leone Andrew and Wasley Charles (2005)

$$TA_{it}/A_{it-1} = \beta_0(1/A_{it-1}) + \beta_1((\Delta REV_{it} - \Delta REC_{it})/A_{it-1}) + \beta_2(PPE_{it}/A_{it-1}) + \beta_3 ROA_{it} + \varepsilon_{it}$$

where,  $ROA_{it}$  represents the return on assets of firm  $i$  in year  $t$ .

- Model of Raman and Shahrur (2008)

$$TA_{it}/A_{it-1} = \beta_0(1/A_{it-1}) + \beta_1((\Delta REV_{it} - \Delta REC_{it})/A_{it-1}) + \beta_2(PPE_{it}/A_{it-1}) + \beta_3 ROA_{it} + \beta_2 BM_{it} + \varepsilon_{it}$$

where,  $BM_{it}$  represents the book-to-market ratio of firm  $i$  in year  $t$ .

Noteworthy, the non-discretionary accruals designate the fitted values derived from the above models, while the discretionary accruals are defined as being the residuals. Following Djama and Boutant (2006), Missonier-Piera and Ben-Amar (2007), and Boutant (2011), a pooled regression is used in our specific context, where each model is estimated according to the state of industry during the period preceding the specific merger event.

#### 3.1.2. Measuring the explanatory variables

For the sake of exploring the impact of institutional ownership on earnings management, we undertake to classify the institutional investors into two groups, namely, the transient investors versus the dedicated ones. According to Brickley et al. (1988), banks and insurance companies are regarded as passive or transient institutional investors. As for the group encompassing the active or dedicated institutional investors it includes pension funds and investment companies. With regards to the specific mergers and acquisitions context, a further constituent of institutional investor can be identified, namely, the institutional cross-holding. Hence, the following measures have also been applied to our study case:

- Transient Institutional Ownership (TIO): we measure transient institutional ownership as being the percentage of shares held by passive-institutional investors.
- Dedicated Institutional Ownership (DIO): we measure dedicated institutional ownership as being the percentage of share held by active institutional investors.
- Institutional Cross-Holding (ICH): we measure institutional cross-holding as being a dummy variable, which takes value one in the presence of institutional investorsholding shares in both the target and the acquirer firms, and zero otherwise.

For the purpose of identifying other determinants of earnings management by the acquiring firms, we also undertake to analyze the following variables:

- Pre-bid ownership positions in target companies (POTC): this variable is measured as a dummy variable, taking value one if the merger is led between entities under different controls and zero if the merger is led between entities under common control.
- Auditor quality of the mergers (AUDIT): this variable is measured as being a binary variable, which takes value one in the presence of a high-quality merger auditor (Big-X) and zero otherwise.
- Merger-payment method (MP): this variable is measured as a binary variable taking the value one if absorbent firms use equity as a payment method and zero if they apply cash or mixed payments.

3.2. Research design

For the sake of testing the validity of the earnings management hypothesis relevant to mergers and absorptions, we will proceed by assessing the acquirer earnings management through an examination of its discretionary accruals in the year preceding the announcement of merger.

The observation of a positive and significant average value of discretionary accruals during the period T-1 would allow us to validate this hypothesis. Thereafter, multivariate analyses will be applied to examine the association between institutional ownership and earnings management. Thereby, multivariate ordinary least squares regressions will be used to estimate the following regression:

$$DA_{i,t-1} = \beta_0 + \beta_1 TIO_i + \beta_2 DIO_i + \beta_3 ICH_i + \beta_4 POTC_i + \beta_5 AUDIT_i + \beta_6 MP_i + \epsilon_i$$

Where, the dependent variable takes the firm of discretionary accruals (DA); is our measurement of earnings management by absorbent firm *i* in relative to the year prior to the merger announcements), and the independent variables are, respectively, made up of transient institutional ownership (TIO), dedicated institutional ownership (DIO), institutional cross-holding (ICH), pre-bid ownership positions in the target companies (POTC), mergers' auditor quality (AUDIT), along with the merger payment method (MP). These variables are defined in Table 1.

Table 1  
Variable definitions.

Variables	Definition	Predicted sign
<i>Dependent variable</i>		
DA	The value of discretionary accruals of the absorbent firm, estimated via: • M-Dechow: Model of Dechow et al, (1995); • M-Kothari: Model of Kothari et al, (2005); • M-Raman: Model of Raman and Shahrur, (2008)	
<i>Independent variables</i>		
TIO	The percentage of shares held by passive institutional investors (banks and insurance companies)	+
DIO	The percentage of shares held by active institutional investors (pension funds and investment companies)	-
ICH	Dummy variable that takes value 1 in the presence of institutional cross-holding, and 0 otherwise	+
POTC	Dummy variable that takes value 1 when the merger is led between entities under different controls, and 0 otherwise	+
AUDIT	Dummy variable that takes value 1 in the presence of a high-quality merger auditor (member of the Big-X), and 0 otherwise	-
MP	Dummy variable that takes value 1 when the absorbent firms use equity as a payment method, and 0 otherwise	+

3.3. Sample

Our mergers's sample includes the transactions contemplated by the Paris stock-exchange operations' commission COB (Commission des Opérations de Bourse) prior to the year 2004, as well as the financial-markets' authorities AMF (Autorité des Marchés Financier) following that same year. Moreover, the mergers selected to constitute our sample of study are ones in which the targets become totally absorbed in the acquirers. Within this search process, the initial sample includes 139 mergers accomplished by French companies listed on the Paris Stock Exchange over the period ranging from 2000 to 2010. We note that 35 transactions completed by financial companies have been excluded due to the special regulations they are subjected to. Besides, 28 transactions have been rejected due to the lack of data necessary to evaluate the merger-related earnings management. Hence, our final sample turns out to include 76 French mergers.

Based on the Industry-Classification Benchmark, the absorbent companies belong principally to the Industrial, Consumer Services and Technology sectors. Jointly, they account for 72% of the study sample. Panel A of Table 2, below, depicts the sample distribution by industry, while Panel B of the same table, depicts the sample distribution per year.

The estimation models of non-discretionary accruals are regressed, in the present study, on the same sample while referring to a period prior to the merger event. According to the empirical data available, the estimation is made over a five-year period preceding the merger conclusion year (T-6 to T-2). Consequently, the total number of observations turns out to equal 218 data; that makes 76 companies over a five-year period, regarding which 162 missing data have been excluded.

The discretionary component of the total accruals is estimated by means of three models (Dechow et al., 1995; Kothari et al., 2005; Raman & Shahrur, 2008), while applying a pooled type of regression for each industry. Following Marrakchi (2000), firms belonging to a certain industry whose number is inferior to ten have not been considered. On referring to Panel A of Table 2, three industries have been discovered to meet this requirement (Industrial, Consumer Services, and Technology).

4. Main empirical results

4.1. Hypothesis assessment of the merger-related earnings management

Table 3 presents a depiction of the total accruals' descriptive statistics and their components relevant to the periods T-2, T-1, and

Table 2  
Industry and event-year distribution of a 76 French merger sample occurring between 2000 and 2010.

Panel A. Sample distribution by industry					
ICB code	Industry	Test sample		Estimation sample	
		N. of mergers	Percentage	N. of firms	Firm-years
0001	Oil and gas	4	5	4	12
1000	Basic materials	4	5	4	16
2000	Industrials	14	18	14	50
3000	Consumer goods	8	11	8	24
4000	Health care	5	17	5	15
5000	Consumer services	22	29	22	47
9000	Technology	19	25	19	54
Total		76	100	76	218

  

Panel B. Sample distribution by year												
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
N	15	8	6	7	10	5	10	6	4	2	3	76
%	19.7	10.5	7.9	9.2	13.2	6.6	13.2	7.9	5.3	2.6	3.9	100

ICB, Industry Classification Benchmark.

**Table 3**  
Descriptive statistics (all measurements are scaled by lagged total assets).

Panel A. Descriptive statistics of total accruals and their components during the periods T-2 (2 years prior to the merger), T-1(the year prior to the merger) and T (the merger-conclusion year)							
Variable	N		T-2		T-1		%
	Mean	S.D	Mean	S.D	Mean	S.D	
Net income	76	0.026	0.116	0.054	0.293	0.036	0.160
Operating cash flow	76	0.044	0.139	0.027	0.298	0.079	0.121
Total accruals	76	-0.018	0.116	0.027	0.126	-0.043	0.164

  

Panel B. Total accruals' mean difference of scaled by lagged total assets (Assets t-1)							
T-test for equality of means							
Year	Mean	t	Sig	Paired differences T- / T-2		t	SigT-1
				Mean	Std. deviation		
T-1	0.027	1.865	0.066	0.045	0.152	2.605	0.011**
T-2	-0.018	-1.384	0.170				

  

Year	Mean	t	Sig	Paired differences T / T-1		t	Sig
				Mean	Std.deviation		
T	-0.043	-2.317	0.023	-0.070	0.187	-3.285	0.002***
T-1	0.027	1.865	0.066				

\*\*\* Significant at a 1% threshold.  
 \*\* Significant at a 5% threshold.  
 \* Significant at a 10% threshold.

T. As indicated, the total accruals' average for acquirers during the merger year and the two preceding ones turn out to be negative. They represent, respectively, -1.8% and -4.3% of the total assets. Nevertheless, the results show that they take a positive value in the year prior to the merger; the equivalent of 2.7% of the total assets.

Regarding the periods T-1/T-2, the t-test relevant to the equality of means shows an important increase in total accruals during the year T-1. This enhancement represents 4.53% of the total assets and it is significant at a threshold of 5% according to the Student test. These preliminary results do support the hypothesis of earnings management by acquirers with respect to the specific context of merger. This empirical evidence is approved by the importance of the total accruals' value corresponding to merger-conclusion year. Indeed, the total-accruals' paired difference relative to the periods T/T-1 is negative, reaching a proportion of 7% of the total assets. This result can be explained by the phenomenon of the accounting adjustments reversibility performed during the year T-1 in year T.

M-Dechow stands for the model of Dechow et al. (1995); M-Kothari represents the model of Kothari et al. (2005); M-Raman represents the model of Raman and Shahrur (2008); all measures are scaled by lagged total assets.

**Table 4**  
Earnings-management evaluation.

Panel A. Evaluation of total accruals and their components during the year T-1			
	M-Dechow	M-kothari	M-Raman
Total accruals	0.027	0.027	0.027
Non-discretionary accruals	-0.032	-0.037	-0.046
Discretionary accruals	0.059	0.064	0.073

  

Panel B. Discretionary accruals in the year prior to a merger			
	M-Dechow	M-kothari	M-Raman
Discretionary accruals	5.99%	6.46%	7.34%
T-Student	4,317	4,799	5,271
Sig	0.000***	0.000***	0.000***
N	N = 76	N = 76	N = 76

M-Dechow stands for the model of Dechow et al. (1995); M-Kothari represents the model of Kothari et al. (2005); M-Raman represents the model of Raman and Shahrur (2008); all measures are scaled by lagged total assets.

\*\*\*Significant at a 1% threshold.

As for Table 4 below, it summarizes the acquirer accruals' measurements required to form a basis for univariate testing. It depicts the mean of total accruals, non-discretionary accruals, and discretionary accruals relevant to the year T-1. In consistency with the works of Erickson and Wang (1999), Djama and Boutant (2006), Gong et al. (2008), Boutant (2010), Nasfi and Albouy (2011), and Higgins (2013), significant discretionary accruals have been discovered to persist during the merger preceding year. The acquirers' average discretionary accruals vary between 5.99% and 7.34%, depending on the earnings management evaluation model adopted. Actually, these empirical findings prove to validate the earnings management hypothesis pertaining to merger and absorption.

4.2. Determinants of earnings management around mergers

Table 5 reports the descriptive statistics and correlations between explanatory variables.

The reached results demonstrate that both the dedicated institutional investors and the transient investors, respectively, own an average of 13.7% and 6.6% of the equity absorbent firms. The descriptive statistics of dichotomous variables highlight that 17% of the absorbent companies are characterized by the presence of institutional cross-holding in their capital structures, and that only 20% of these companies have had a Big-X auditor for the conclusion of their merger. In addition, 32% of mergers have been concluded between entities under different control. Finally, the percentage of the absorbent companies applying equity as payment method represents 96% of our studied sample.

Table 6 indicates the results of the discretionary-accruals' regression on the explanatory variables. These results reveal that the estimated-coefficients' signs conform to the expected signs, except for the variable AUDIT sign. The first model's empirical results highlights that transient-institutional ownership (TIO) is positively correlated with discretionary accruals, as measured via

**Table 5**  
Descriptive statistics and correlations.

Panel A. Descriptive statistics				
Variables	N	Mean	SD	
TIO	75	0.066	0.139	
DIO	75	0.137	0.195	
Dichotomous variables (N=76)				
Variables	1		0	
	N	%	N	%
ICH	13	17	63	83
POTC	24	32	52	68
AUDIT	15	20	61	80
MP	73	96	3	4

  

Panel B. Pearson correlation coefficients between explanatory variables (N=76)						
	TIO	DIO	ICH	POTC	AUDIT	MP
TIO	1					
DIO	-0.084	1				
ICH	-0.018	0.369**	1			
POTC	0.110	0.028	-0.054	1		
AUDIT	-0.230	-0.043	-0.229	-0.192	1	
MP	-0.053	0.050	0.093	-0.013	0.107	1

TIO stands for the percentage of shares held by transient institutional ownership; DIO represents the percentage of shares held by dedicated institutional ownership; ICH is a dummy variable taking value 1 in the presence of institutional cross-holding, and 0 otherwise; POTC is a dummy variable that takes the value of 1 when the merger is led by entities under different control, and 0 otherwise; AUDIT is a dummy variable that equals 1 if the merger auditor is a Big-X member, and 0 otherwise; MP is a dummy variable that takes value 1 when the absorbent firms use equity as a payment method, and 0 otherwise.

\*\* Significant at 0.01 (bilateral).

**Table 6**

Earnings management determinants of in the year preceding the merger conclusion (year T–1)  $DA_{i,t-1} = \beta_0 + \beta_1 TIO_i + \beta_2 DIO_i + \beta_3 ICH_i + \beta_4 POTC_i + \beta_5 AUDIT_i + \beta_6 MP_i + \varepsilon_i$ .

Variables	Expected sign	Model 1	Model 2	Model 3
Intercept	?	0.0172 (0.6534)	0.0194 (0.6105)	0.0276 (0.4727)
TIO	+	0.0145 (0.7954)	0.0193 (0.7287)	0.0239 (0.6703)
DIO	–	–0.0959 (0.0245)**	–0.1070 (0.0123)**	–0.1018 (0.0177)**
ICH	+	0.0835 (0.0005)***	0.0835 (0.0005)***	0.0848 (0.0004)***
POTC	+	0.0411 (0.0178)**	0.0438 (0.0116)**	0.0446 (0.0107)**
AUDIT	–	0.0132 (0.5166)	0.0690 (0.7341)	0.0147 (0.7032)
MP	+	0.0115 (0.7652)	0.0168 (0.6618)	0.0147 (0.7032)
N		76	76	76
F value		3.244	3.629	3.633
P(F)		0.008***	0.004***	0.004***
Adjusted R <sup>2</sup>		0.159	0.182	0.182

The dependent variable is represented by discretionary accruals (DA) (our measurement of earnings management by the absorbent firm *i* in the year prior to the merger announcements). This variable is estimated via: the model of Dechow et al. (1995) is a model (1); the model of Kothari et al. (2005) is a model (2); the model of Raman and Shahrur, (2008) is a model (3). These models are estimated using the ordinary-least-squares method (OLS).

The explanatory variables are defined as follows: TIO stands for transient institutional ownership; DIO represents dedicated institutional ownership; ICH is the institutional cross-holding; POTC denotes the pre-bid ownership positions in target companies; AUDIT is auditor quality of the mergers; and MP is the merger payment method.

\*\* Significant at a 1% threshold.

\*\*\* Significant at a 5% threshold.

\* Significant at a 10% threshold.

the model of Dechow et al. (1995). Nevertheless, these results do not confirm our hypothesis (H1) owing to the fact that the coefficient associated with the variable TIO is insignificant with respect to the Student test ( $P=0.7954$ ).

In accordance with the hypothesis H2, the multivariate-analysis results relevant to the first model (model 1) show a negative association between the discretionary accruals level and the share percentage owned by dedicated institutional ownership. The coefficient associated to the variable DIO is negative ( $\beta = -0.096$ ) and significant ( $P=0.025$ ) at the threshold of 5%. Thus, one might well noticed that the absorbent firms are less incited to manage earnings upwards in the period prior to a merger in the presence of dedicated-institutional ownership. These results confirm well the institutional investors' monitoring hypothesis, which has also been confirmed by Koh (2007), Ben Kraiem (2008), and Bethel et al. (2009).

As can be deduced, our achieved results provide strong evidence that institutional cross-holding does have a significant influence on earnings management. Indeed, the presence of institutional cross-ownership is positively and significantly related to discretionary accruals at the level of 1%. Hence, our advanced hypothesis (H3) is supported as well. This indicates well that the absorbent companies are more incited to manage earnings upwards in the period prior to a merger in the presence of institutional cross-ownership.

The results depicted in Table 6 show well that the variable POTC does significantly influence the absorbent companies' level of discretionary accruals. The coefficient associated with this variable is positive ( $\beta = 0.041$ ) and significant ( $P=0.018$ ) in consistency with the Student test. This means that the absorbent firms are more incited to manage earnings upwards in the period prior to a merger once the operation is led between entities under different control.

Contrary to all expectations, the empirical results highlight a negative association between the quality of the merger auditor and the discretionary accruals' value in T-1.

The coefficient associated to the variable MP is insignificant. Therefore, the merger payment-method does not constitute an explanatory determinant of the absorbent companies' accounting policies. These results do not prove to corroborate those achieved by Erickson and Wang (1999), Louis (2004), and Gong et al. (2008).

Ultimately, we can state that the model 2 and 3 reached results do confirm the empirical findings of model 1. Therefore, regardless of the model adopted for the evaluation earnings management in the year prior to a merger, the empirical results show that the variables dedicated institutional ownership (DIO), institutional cross-holding (ICH), and pre-bid ownership positions in target companies (POTC) constitute the major determinants of earnings management in regard to merger.

## 5. Conclusion

This study has been designed to explore the institutional investors' impact on earnings management in the specific context of mergers. The objectives of this paper are twofold: on the one hand, testing the validity of the earnings management hypothesis around merger and identifying the earnings-management determinants as undertaken by the acquiring firms, on the other.

With reference to the evaluation model of earnings management as developed by Dechow et al. (1995), Kothari et al. (2005), Raman and Shahrur (2008), our elaborated work turns out to provide three major contributions to the relevant literature. Our first finding consists in highlighting that the absorbing firms usually most often undertake to manipulate earnings in the year preceding the merger offer. Using a sample of 76 French mergers and absorptions concluded over the period 2000–2010, the empirical results show that discretionary-accruals average value for acquirers is discovered to be positive in the year preceding a merger, in consistency with the earnings-management hypothesis. In a second place, our reached evidence has proven to be consistent with the active-monitoring hypothesis. Actually, our attained results prove well that the acquiring firms are less incited to manage earnings upwards in the period prior to a merger in the presence of dedicated institutional ownership. The monitoring role exerted by the dedicated-institutional investors does restrict the opportunities of earnings management around mergers and acquisitions.

Thirdly, it has been discovered that the earnings-management incentives undertaken by the acquiring firms in the year prior to a merger are more important with the presence of institutional cross-holding and the existence of a pre-bid toehold shareholding by the bidding companies.

However, some limits are allocated to our paper. The first limit is bound to the reduced size of our sample. As for the second limit, it has to do with the measures relevant to some variables. For instance, one could point out to the assimilation of the share percentage held by the institutional investor in the voting right, which appears to be an effective measurement in the institutional-ownership variable. Finally, it might turn out that the introduction of other corporate governance mechanisms seem imposed for an eventual enrichment of this work.

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