Research and development capitalization, fair value, and earnings management: A study of French listed companies

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Abstract

Research Question: This paper investigates the problem of the multitude of accounting choices allowed by international accounting in the French context.

Motivation: The discretionary accounting choices of capitalization of development costs and the use of fair value in the French context of written law impact earning management.

Idea: The choice of the French context is explained by the fact that France is a country of written law where accounting choices differ from countries of common law, especially in different requirements in terms of transparency.

Data: We adopt two empirical models of earnings management based on linear regressions.

Tools: The first is based on discretionary accruals and the second relies on the correlation between total accruals and operational cash flows.

Findings: Based on a sample of 100 French companies belonging to the SBF 120 between 2000 and 2020 the linear regressions suggest that the capitalization of development costs increases earnings management by manipulating the amount of the expenses, the period of amortization, and the choice of the depreciation method. However, the choice of fair value decreases earnings management and signals the commitment to accounting transparency by improving the relevance and limiting the possibility of manipulation.

Contribution: This study highlights the problem of accounting choices permitted for capitalization decisions regarding development costs and fair value.

Keywords: Earning management, Research and Development, Fair value.

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1. Introduction

The current context of a globalized economy characterized by international capital mobility and stimulated by an increase in innovation and market deregulation has created an increasing need for global accounting standards that meet the criteria of relevance, intelligibility, consistency of methods and transparency. The International Financial Reporting Standards (IFRS) have been developed in this context.

The transition to the International Financial Reporting Standards (IFRS) in 2005 aimed to strengthen international accounting analysis through more meaningful comparisons and increased transparency of financial publications. In addition, it aimed to create rules for calculating and reporting homogeneity on several complex topics. Finally, it introduced a new philosophy based on financializing accounting (DeMaria & Marty, 2007) and economics (Storm, 2018).

The transition to these standards represents an evolution of accounting culture designed as a 'revolution' (Kerdrel, 2004) or a 'paradigm shift' (Le double, 2005). Since its adoption by the European Union in 2002, the impact of IFRS adoption on European companies has been the focus of several research studies. However, even after adopting IFRS, managers have continued to make discretionary accounting choices that can influence earnings smoothing strategies (Ahmed *et al.*, 2013; Christensen & al., 2015). For this reason, by forcing the board to review several standards with options, the International Organization of Securities Commissions (IOSCO) indicated that reducing some accounting options was one of the basics of reporting the quality of the international standard.

This research aims to analyze two accounting choices allowed by IFRS that affect earnings management: capitalization (or not) of the costs of research and development (R&D) and evaluation at a fair value historical cost.

Our contribution highlights the problem of the multitude of accounting choices allowed by international accounting in the French context. Few studies have interested in this aspect, hence our academic interest in the issue. The choice of the French context is explained by the fact that France is a country of written law where accounting choices differ from countries of common law, especially in different requirements in terms of transparency (Bushman *et al.*, 2004). The autonomy of accounting rules emerged from the principle of the preeminence of substance over form, where analysis of an operation escapes the legal formalities. As a result, IFRS standards are not fully adapted to the economic and institutional context of countries governed by written law and to culture with a strong legal characteristic inspired by a patrimonial vision of the company.

In order to achieve conclusive results, we conduct an empirical study that links these two accounting choices with discretionary accruals on the one hand and total accruals on the other. So, we adopt a quantitative approach while making a permanent return between theoretical concepts and observations of the choices made by 100 French companies in the SBF 120.

The paper proceeds as follows. The next section presents the literature review and briefly discusses fair value. The third section provides the research methodology and the results. Finally, the last section concludes and provides avenues for future research.

2. Literature review

Earnings management

After the bankruptcy of Enron in 2001, earnings management was defined as a purposeful intervention in the external financial reporting process to obtain some private gain, as opposed to neutral participation. As a result, some restrictions on manager discretion over accounting and other policies are expected, but some discretion will remain' (Shipper, 1989). Earnings management is an essential topic in academic research. It occurs 'when managers use judgment in financial reporting to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or influence outcomes that depend on reported accounting numbers' (Healy & Wahlen, 1999).

Moreover, Lo (2007) considers earnings management an actual criminal act and the most provocative subject, the study of accounting manipulations generating multiple crises of confidence. However, flexible principle-based standards could provide opportunities for earnings management (Barth *et al.*, 2008). Thus, some researchers confirm that adopting IFRS is not a good fit for the United States because IFRS is principles-based, whereas U.S. GAAP is rules-based, or they are not an excellent cultural (Zehra & Eroglu, 2017). These standards allow considerable flexibility in applying principles, various accounting choices, and many subjective judgments. So, creative accounting was influenced by the flexibility of international accounting regulations (Mirelana & Corina, 2012). This subjectivity in applying standards allows earnings management after the transition to IFRS.

Earnings management and accounting choices

In harmony with a normative approach based on principles, the choices allowed by IFRS (in the first application or later) can increase earnings management by manipulating accounting choices.

When the standards allow several alternative accounting methods, managers can conduct confident discretionary choices, such as the choice of the amortization method (linear or accelerated) and the use of depreciation. Capkun *et al.* (2016) state that the IFRS standards provide greater flexibility in accounting choices because of vague criteria, overt and covert options, and subjective estimates. In a more innovative environment, such as the IFRS, managers can use discretionary policies in treating intangible assets such as R&D expenses (Markarian & Prencipe, 2008) and fair value.

Capitalization of development costs

The treatment of R&D expenditures is a controversial subject. Some researchers demonstrate that the costs of R&D are an economic non-current asset that influences the future profitability of the firm (Sougiannis, 1994; Ballester *et al.*, 2003), market value (Shevlin, 1991; Sougiannis, 1994), and the relevance of accounting numbers (Lev &Zarowin, 1999; Healy *et al.*, 2001). The decrease in R&D investments induces real earning management (Mande *et al.*, 2000; Guidara & Boujelbene, 2014). So, in the case of expensing R&D costs, a decrease in R&D investments leads to an increase in pre-tax earnings. Thus, Garanina *et al.* (2016) add that the managers of companies in Russia and Germany are engaged in earnings management practices using R&D costs. In the case of Russian companies, managers enjoy discretion in accounting choices when trying to meet debt covenants by adopting those methods that increase financial results. German managers are focused more on the other type of earnings management incentives – earnings smoothing.

By the same amount, other researchers find that the absence of future economic benefits of this asset (Kothari *et al.*, 2005) and the choice not to capitalize on R&D increases the objectivity of financial statements and limit the opportunism of managers who capitalize on the costs of R&D for projects that have a low probability of success to delay the depreciation of the R&D assets (Nelson *et al.*, 2002).

The capitalization of R&D costs is an instrument that allows more earnings management by manipulating the amount of these expenses, the period of amortization, and the choice of the depreciation method.

Under International Accounting Standard (IAS) 38, R&D costs are classified according to the judgment of managers whom the can incorporate them into expenses and recognize them as intangible assets under six conditions.

However, the capitalization decision could stimulate the subjectivity of managers who judge whether the conditions of IAS 38 have been checked. In other words, it is a management decision (Tondeur, 2002; Markarian*et al.*, 2008; Dinh *et al.*, 2009). After the transition to IFRS and in an empirical study of Italian companies listed on the Milan Stock Exchange, Markarian *et al.* (2008) found that the decision to

capitalize on development costs facilitates earnings management (Nelson *et al.*, 2002). Their model indicates that capitalization decision is directly related to the motivations of earnings management, such as the profitability of the firm and its debt level. Thus, capitalization is an opportunistic decision positively related to future profitability but not significantly correlated with the firm's level of debt.

Therefore, companies that generate a lower return on assets (compared to the average of the previous two years) are more likely to capitalize on R&D, whereas firms that see their performance improve do not capitalize on these expenses. The results of this study indicate that managers use the capitalization of R&D as a target of opportunistic earnings management (not as a signal).

Similarly, companies with a high level of debt capitalize on R&D for enhanced opportunistic earnings management and avoid the potential risk of violating any contractual clause. In 2011, Tsoligkas and Tsalavoutas revealed that the capitalization of R&D is significantly and positively related to market values in the U.K. Thus, the market perceives this asset as a successful project with future economic benefits, and the decision to capitalize the R&D improves the signal of future profitability. Based on these reasons, we formulate the following hypothesis:
H1. The capitalization of R&D is positively related to earnings management.

The principle of substance over form is derived from fair value and encourages companies to reflect reality by allowing the use of internal models, which can be subjective (Marra, 2016) and can influence the reliability of accounting information (Demaria & Dufour, 2007; Ramanna, 2008; Ramanna& Watts, 2012; Yao *et al.* 2018).

Fair value is often seen as a source of creative accounting (Muller *et al.*, 2008) due to the progressive abandonment of the principle of prudence (Capron, 2006). In addition, the application of fair value increases the risk of overestimating the value of the assets, the risk of litigation, and the loss of reputation (Christensen & Nikolaev, 2012).

Also, inventory valuation, amortization methods, or asset valuation methods (at historical cost or fair value methods) encourage the implementation of creative accounting (UjkaniMiti *et al.*, 2018). However, according to Thesing & Velte (2021), fair value measurements rely heavily on managerial assumptions and require managerial discretion (Fargher & Zhang, 2014).

In contrast, several studies suggest the superiority of fair value because it improves the relevance of the accounting numbers and limits the possibility of manipulation. Furthermore, according to IAS 40, fair value measurements enhance earnings quality (Liang & Riedl, 2014; Israeli, 2015; Bandyopadhyay *et al.*, 2017).

In this regard, Dietrich *et al.* (2001) demonstrated that estimations based on the fair value determined by independent and external experts are more objective than those

reported by internal evaluators. Therefore, the firms choose the fair value model if they engage in a transparent presentation strategy regarding their annual reports (Muller *et al.*, 2008). Therefore, in the context of real estate, the research indicates that the adoption of IFRS and the choice of fair value signal the commitment to transparency of the accounts (Leuz &Verrecchia, 2000). Furthermore, the evaluation system is based on the historical cost that promotes opportunities for manipulation. Managers can sell assets generating latent gains and defer the sale of assets generating potential losses to smooth the earnings. Therefore, as a principle, the fair value is consistent with active risk management, reduced complexity, harmony with comparability, and more neutrality and transparency of information. We, therefore, formulate the following hypothesis:

H2. The fair value is negatively related to earnings management.

3. Research methodology

To verify our research hypotheses, we present two empirical models of earnings management based on linear regressions. The first is based on discretionary accruals and the second relies on the correlation between total accruals and operational cash flows.

Sample
Our analysis is based on a sample of 100 French companies belonging to the SBF 120 index. We focus on the period from 2000 to 2020 by dividing it between 2000–2005 (French standards) and 2006–2020 (IFRS). Article 357-10 of the law of July 24, 1966, applicable to the accounts studied, provided that the report on the management of the group "explains the situation of the whole constituted by the companies included in the consolidation (...) as well as its research and development activities". Article L. 233-26 of the new Commercial Code repeats the same obligation. We carried out a textual search from files drawn up in PDF format or a manual search when this was not the case, based on the terms "research", "development," and "R&D". We, therefore, considered that companies that never mentioned R&D in their annual report did not carry out any R&D activity.

Some companies were eliminated from the initial sample because they have a particular financial functioning (banks, insurance companies, leasing companies, etc.), lack basic data, or present their accounts according to US GAAP.

Empirical models

Earnings management is first measured by discretionary accruals, which correspond to the residuals of the regression. For the empirical validation of the model we base

ourselves on the model of Jones (1991) which is considered the most robust and the most widely used in the literature. It looks like this:

$TA_{it}/A_{it-1} = \alpha_0 (1/A_{it-1}) + \alpha_1 [\Delta REV_{it}/A_{it-1}] + \alpha_2 (PPE_{it}/A_{it-1}) + £_{it}$ (4.6)

With, A_{t-1}: total assets of the previous year;

TA_{IT}: total accounting adjustments of company i in year t;

ΔREV_{it}: change in turnover of company i between year t-1 and year t;

PPE_{it}: gross fixed assets excluding financial fixed assets of company i in year t.

$£_{it}$: error term of company i at year t.

Based on linear regressions, we adopt empirical models of earnings management as a function of capitalization of R&D (H1), fair value (H2) and other control variables, better described the results on French sample. The first is based on discretionary accruals and the second relies on the correlation between total accruals and operational cash flows. We measure accrual-based earnings management using discretionary accruals (Roychowdhury, 2006; Cohen *et al.*, 2008; Cohen & Zarowin, 2010). We calculate discretionary accruals by deducting firms' actual accruals from the normal level of accruals.

To estimate discretionary accruals, we test the OLS (ordinary least squares) regression using the following model:

$\left| AD_{i,t} \right| = \alpha_0 + \alpha_1 IFRS_{i,t} + \alpha_2 RD_{i,t} + \alpha_3 JV_{i,t} + \alpha_4 IFRS_{i,t} *RD_{i,t} +$

$\alpha_5 IFRS_{i,t} *JV_{i,t} + \alpha_6 \left| CF_{i,t} \right| + \alpha_7 Size_{i,t} + \alpha_8 Debt_{i,t} + \alpha_9 Prof_{i,t} +$

$\alpha_{10} Grow_{i,t} + \alpha_{11} Big 4 + \alpha_{12} Xlist_{i,t} + £_{i,t}$ (1)

where

$\left| AD_{i,t} \right|$ is the absolute value of discretionary accruals of firm i in year t;

IFRS is a dummy variable equal to 1 if there is an application of IFRS (after 2005), 0 otherwise;

is a dummy variable equal to 1 if the firm capitalizes the R&D, 0 otherwise;

JVis a dummy variable equal to 1 if the firm chooses the assessment of its assets at fair value, 0 otherwise (historical cost);

$\left| CF_{i,t} \right|$ is the absolute value of the operational cash flows by total assets;

Size,t is the size of firm i in year t according to the logarithm of total assets;

Debit,t measures the level of leverage of firm i in year t;

Profi,t measures the profitability of the assets of firm i in year t (the ratio of Return on Assets, ROA);

Growi measures the growth of the turnover of the company through the ratio of the variation between the current year and the previous year;

Big 4 is a dummy variable equal to 1 if the auditor of the company is one of the Big Four accounting firms, 0 otherwise.

Xlisti is a dummy variable equal to 1 if the firm is listed on a foreign stock market, 0 otherwise.

We also use an OLS regression to determine the correlation between total accruals and operational cash flow.

$$ACC_{i,t} = \alpha_0 + \alpha_1\ IFRS + \alpha_2\ RD + \alpha_3\ JV + \alpha_4\ CF_{i,t} + \alpha_5\ IFRS* CF_{i,t} +$$
$$\alpha_6\ IFRS *CF_{i,t}*RD + \alpha_7\ IFRS * CF_{i,t}* JV + \alpha_8\ Size_{i,t} + \alpha_9\ Debt_{i,t} +$$
$$\alpha_{10}\ Prof_{i,t} + \alpha_{11}\ Grow_{i,t} + \alpha_{12}\ Big\ 4 + \alpha_{13}\ Xlist_{i,i,t} + \pounds_{i,t} \qquad (2)$$

Where,

ACC,t measures the total accruals of firm i in year t divided by the total assets. The other variables are the same as those used in equation (1).

3. Results

The descriptive statistics of the discretionary and total accruals are presented in Table 1. The positive A.D. is more frequent than the negative A.D., which may lead to the assumption that the superiority of the manipulation of discretionary accruals is increasing. As revealed by the t-test, the mean difference between total positive and negative accruals is significant (10%).

Table1. Descriptive statistics of discretionary and total accruals

	|Mean|	Median	Minimum	Maximum	S-D
|AD|	0.0403	0.0204	0.00000	1.0476	0.0741
AD < 0	-0.0415	-0.0198	-1.0476	0.0000	0.0859
AD >=0	0.0391	0.0206	0.0000	0.4339	0.0610
t-test	0.3210				
(two-tailed significance)	0.7482				
Total Accruals	-0.1674	-0.0345	-44.4980	0.3293	2.0196
AT < 0	-0.2205	-0.0453	-44.4980	-0.0000	2.2639
AT >=0	0.0372	0.0195	0.0000	0.3293	0.0454
t-test[*]	1.7178				
(two-tailed significance)[*]	0.0858				

[*] *Significantly different from zero at 0.1*

Table 2 reveals a non-significant relationship between the capitalization of R&D and earnings management as measured by discretionary accruals during pre-and post-adoption (a bilateral significance of 0.309, 0.416, and 0.560> 10%). However, for companies that do not capitalize on R&D expenses, we associated adopting IFRS

with lower levels of the absolute value of discretionary accruals (5%). This confirms that the capitalization decision increases the earnings management measured by discretionary accruals (Mande *et al.*, 2000; Guidara & Boujelbene, 2014).

In addition, we found that adopting IFRS is associated with a significant increase in negative discretionary accruals (10%) for firms that retain the evaluation of their assets at a historical cost. Thus, discretionary accruals at post-adoption are higher than those at pre-adoption and earnings management, increasing after the transition to IFRS (Markarian & Prencipe, 2008).

However, we do not detect a significant correlation between the fair value and discretionary accruals because a minority of companies chose the fair value as an alternative to historical costs before the transition and the presence of asymmetric information regarding the disclosure of this choice in official documents (Leuz & Verrecchia, 2000).

Table 2. Univariate analysis of discretionary accruals

		Before IFRS Mean	After IFRS Mean	t-test	(two-tailed significance)
R&D Capitalization	$\lvert$DA$\rvert$	0.0044	0.034	-1.024	0.309
	DA<0	-0.0032	-0.0261	0.825	0.416
	DA >= 0	0.0067	0.0409	-0.588	0.56
	Difference	-0.0099			
No Capitalization	$\lvert$DA$\rvert$	0.0407	0.0265	2.02	0.046**
	DA<0	-0.0443	-0.0263	-1.742	0.087*
	DA >= 0	0.0352	0.0266	1.039	0.303
	Difference	-0.0795			
Fair value	$\lvert$DA$\rvert$	-	0.0408	-	
	DA<0	-	-0.041	-	
	DA >= 0	-	0.0407	-	
	Difference				
Historic cost	$\lvert$DA$\rvert$	0.0473	0.0356	1.286	0.2
	DA<0	-0.0559	-0.0285	-1.746	0.084*
	DA >= 0	0.0334	0.0407	-0.705	0.482
	Difference	-0.0893			

* Significantly different from zero at 0.1
** Significantly different from zero at 0.05
*** Significantly different from zero at 0.01

Table 3 shows the negative correlation between operational cash flows and total accruals after the introduction of IFRS, which is observed in the presence of earnings management in this period.

Managers act on total accruals when they note the weakness of operational cash flows. For example, when there is a decision not to capitalize R&D expenses,

earnings management increases through the manipulation of the total accruals (Pearson correlation coefficients range from -0.913 to -0.621).

Table 3. **Univariate analysis of the total accruals**

	CF/ACC	Before	After
R&D Capitalization	Coefficient Pearson	-0.390***	-0.568***
Non-Capitalization	Coefficient Pearson	-0.913***	-0.621***
Fair Value	Coefficient Pearson	-	-0.655***
Historical Cost	Coefficient	-0.867***	-0.754***

*** *Significantly different from zero at 0.01*

The regression analysis is primarily performed without the interaction variables with IFRS; they are included in the analysis in Table 4. The results of this regression indicate that the coefficient IFRS*RD is positive in order to 10%. So the decision to capitalize R&D significantly increases the discretionary accruals after the adoption of IFRS and confirms our first hypothesis (H1) (Markarian *et al.*, 2008; Nelson *et al.*, 2002).

However, the coefficient IFRS*JV is negative at the 5% level, which demonstrates that the decision to value assets at a fair value significantly decreases earnings management through discretionary accruals, which confirms our second hypothesis (H2) (Liang &Riedl, 2014; Israeli, 2015; Bandyopadhyay *et al.* 2017).

Table 4. Ordinary Least Squares Regression for Discretionary Accruals

Panel A: Discretionary accruals $\vert AD \vert = \alpha 0 + \alpha 1\ IFRS + \alpha 2\ RD + \alpha 3\ JV + \alpha 4\ IFRS*RD + \alpha 5\ IFRS*JV + \alpha 6 \vert CF \vert + \alpha 7\ Size + \alpha 8\ Debt + \alpha 9\ Prof + \alpha 10\ Grow + \alpha 11\ Big\ 4 + \alpha 12\ Cotation + \text{£i,t}$	Exclusion of interaction variables (1)		Inclusion of interaction variables (2)	
	Estimated Coefficient	**t-statistics**	**Estimated Coefficient**	**t-statistics**
Const.	0.1025***	3.356	0.1118***	2.624
IFRS	-0.0043	-0.6246	-0.0308	-1.001
JV	-0.0098	-1.251	Excluded for multicollinearity	
RD	0.0104	1.302	-0.0122	-0.4331
IFRS*JV	-	-	-0.0156**	-2.08
IFRS*RD	-	-	0.0120*	1.862
$\vert CF \vert$	0.0098	0.1603	-0.0430	-1.008

Panel A: Discretionary accruals $\lvert AD \rvert = \alpha 0 + \alpha 1\ IFRS + \alpha 2\ RD + \alpha 3\ JV +$ $\alpha 4\ IFRS*RD + \alpha 5\ IFRS*JV + \alpha 6 \lvert CF \rvert +$ $\alpha 7\ Size + \alpha 8\ Debt + \alpha 9\ Prof + \alpha 10\ Grow + \alpha 11\ Big\ 4 + \alpha 12\ Cotation + £i,t$	Exclusion of interaction variables (1)		Inclusion of interaction variables (2)	
	Estimated Coefficient	t-statistics	Estimated Coefficient	t-statistics
Size	-0.0052*	-1.76	-0.0042	-1.005
Debt	-0.0002	-2.469	-0.0002	-1.505
Profitability	-0.0003	-0.8822	-0.0004	-0.8698
Growth	0.0949***	5.221	0.1009***	4.709
Big 4	-0.0149*	-1.698	-0.0116	-1.469
Xlist	-0.0326	-1.237	-0.0237	-1.203
R² adjusted	0.4955		0.6062	
F	35.9733***		31.1531***	

Significantly different from zero at 0.1
Significantly different from zero at 0.05
Significantly different from zero at 0.01

The correlation between accruals and operating cash flow

Table 5 shows that the interaction variables IFRS*CF*RD and IFRS*CF*JV were included in the regression analysis. This panel shows that the coefficient of the variable that examines the impact of IFRS on the association between R&D and the correlation of accruals/cash flow is significantly negative in order to 10% (-0,1003). On the other hand, the coefficient IFRS*CF*JV is significantly positive in order to 1% (0.4365) and indicates that the fair value limited opportunistic earnings management after adopting IFRS.

However, the capitalization of development costs increased and the use of fair value decreased earnings management as measured by total accruals. We note that highly leveraged firms are more likely to manage earnings than companies that reveal a low level of debt because they are more likely to violate the restrictions on debt contracts and are more exposed to institutional pressures and lobbies (Xiong, 2006). Furthermore, a large audit firm among the Big Four limits earnings management (VanTendeloo & Vanstraelen, 2005).

Table 5. Ordinary Least Squares Regression for Total Accruals

Accruals	Exclusion of interaction variables (1)	Inclusion of interaction variables (2)

	Estimated Coefficient	t-statistics	Estimated Coefficient	t- statistics
Cons	-0.0917**	-2.482	-0.0778 ***	-2.661
IFRS	0.0082 *	1.662	0.0188**	2.050
RD	0.0048	0.681	-0.0071	-1.053
JV	0.0069	0.854	-0.0212**	-2.241
CF	-0.9278 ***	-25.980	-0.9536***	-39.440
IFRS*CF	-	-	Excluded for multicollinearity	
IFRS*CF*RD	-	-	-0.1003 *	-1.726
IFRS*CF*JV	-	-	0.4365***	5.188
Size	0.0085 **	2.284	0.0066***	2.606
Debt	0.0007 ***	2.721	0.0003**	2.004
Profitability	0.0055 ***	6.912	0.0047***	7.048
Growth	-0.0034	-0.610	-0.0009	-0.208
Big 4	-0.0166*	-1.724	-0.0147 *	-1.921
Xlist	0.0225	1.322	0.0241*	1.913
R² adjusted	0.9281		0.9454	
F	281.3196		296.8208	

Significantly different from zero at 0.1
Significantly different from zero at 0.05
Significantly different from zero at 0.01

Consistent with previous studies, the research initially shows that the managers of French companies use capitalization and adjustment of R&D expenditures to achieve the target results. The French context is interesting here because adopting IFRS standards has led companies to change their method of accounting for R&D expenses. The results show that adopting IFRS standards has not changed the practices of capitalizing R&D expenses to manage results. In addition, it would seem that the companies recording these expenses as expenses under the PCG reference system and modifying their accounting method following the adoption of IFRS have developed a new method of managing results by capitalization. For these companies,

the capitalization of these expenses reduced the real results management by adjusting the R&D expenses.

Any reflection on the concept of faithful image, presented as the official translation of "true and fair value", comes up against the lack of a definition by the regulatory texts. Colasse (1998) shows that the "true-to-life image" is a system that counts events related to the company with reference to their economic substance and not their legal form. The challenge of IFRS is the fight against accounting creativity and to guarantee reliable and relevant information from where the need for a frame of reference that favors the economic translation of the operation at the expense of substantial legal analysis (Raybaud & Turrillo, 1995). Nevertheless, Atik (2008) specifies that managers who choose accounting methods that supposedly reflect information faithful to economic reality can be encouraged, under the pretext of translation of reality, to opt for the most opportunistic policies in order to manipulate the results. In this context, the financial performances of companies that implement IFRS 16 before its effective date have higher financial performance in environments with high levels of corruption. The corporate governance is important to ensure the effectiveness of IFRS (Elshandidy & Hassanein, 2014; Harris, *et al.*, 2019, Marzuki & Wahab, 2018). Marzuki & Wahab (2018) find that corruption weakens the negative relationship between IFRS implementation and accounting conservatism.

4. Conclusion

The transition to IFRS provides several accounting choices that significantly impact management. The context of transition has generated significant controversy due to the use of fair value in a flexible framework based on principles.

Based on linear regressions, we adopt empirical models of earnings management as a function of capitalization of R&D, fair value and other control variables, better describing the results on the French sample. The first hypothesis stated that the capitalization of R&D is positively related to earnings management. This hypothesis is supported in the French sample. In other words, the managers use the capitalization of R&D to target opportunistic earnings management. This result is in line with the findings of most researchers (Mande *et al.*, 2000; Guidara & Boujelbene, 2014). The second hypothesis, stating that the fair value is negatively related to earnings management, is supported in the French sample; this is in line with previous research (Liang & Riedl, 2014; Israeli, 2015; Bandyopadhyay *et al.*, 2017). In other words, the choice of fair value limits earnings management as measured by discretionary accruals and the correlation between total accruals and operational cash flow (Jeanjean, 2001). Remember that earnings are the sum of operating cash flows and accruals.

Our results suggest that the capitalization of development costs allows increased earnings management through discretionary accruals and manipulation of total accruals in the case of weaknesses in operational cash flows (Kim *et al.*, 2001;

Seboui & El Mir, 2006; Markarian*et al.*, 2008). Similar to the results summarized above, the choice of proper value limits earnings management as measured by discretionary accruals and the correlation between total accruals and operational cash flow (Jeanjean, 2001).

However, because a minority of the companies chose fair value as an alternative to historical cost before the transition and asymmetric information regarding the disclosure of this choice in the financial statements, we did not observe a significant correlation between fair value and discretionary accruals.

This paper presents some limits. The first methodological limitation concerns our database based on the annual reports of 100 French companies. It incorporates observations concerning accounting choices made by these companies for development expenses and fair value between 2002 and 2012.

The completeness of this basis was limited by the asymmetry of the information on the disclosure of accounting choices. For this reason, communication on these two options was weak, especially during the pre-adoption period, resulting in preliminary observations before 2005. Although the disclosure rate improved significantly after 2005, our comparative study is characterized by disproportionate observations between the two investigation periods.In addition, we focused on only two accounting choices, not the entire portfolio of choices representing the accounting policy of companies. Managers are encouraged to use a combination of several accounting procedure choices to impact the result significantly.

Finally, several future research is possible, we envisage a work on a comparative analysis of the impact of accounting standards on earning management between the countries belonging to the Continental block and the Anglo-Saxon block.

References

Ahmed, A., Neel, M. & Wang, D. (2013) "Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence", *Contemporary Accounting Research*, vol. 30, no. 4: 1344-1372

Akisik, O. (2020) "The impact of financial development, IFRS and rule of LAW on foreign investments: A cross-country analysis", *International Review of Economics and Finance*, vol. 69, no. C: 815-838.

Ball, R. (2006) "International Financial Reporting Standards (IFRS): Pros and cons for investors", *Accounting and Business Research*, vol. 36, no.1: 5-27.

Ballas, A. A., Skoutela, D., & Tzovas, C. A. (2010) « The relevance of IFRS to an emerging market: Evidence from Greece", *Managerial Finance*, 36, no. 11: 931–948.

Ballester, M., Garcia-Ayuso, M., &Livnat, J. (2003) "The economic value of the R&D intangible assets", *European Accounting Review*, vol.12, no.4: 605-633.

Bandyopadhyay, S. P., Huang, A. G., Sun, K. J. & Wirjanto, T. S. (2017) "The return premiums to accruals quality", *Review of Quantitative Finance and Accounting*, vol. 48, no. 1: 83-115.

Barth M., Landsman W., & Lang M. (2008) "International Accounting Standards and accounting quality", *Journal of Accounting Research*, vol. 46, no. 3: 467-498.

Bushman, R., Piotroki, J.D.& Smith, A. (2004) "What Determines Corporate Transparency?" *Journal of Accounting Research*, vol. 42, no. 2: 207-252.

Capkun, V., Collins, D.&Jeanjean, T. (2016) "The effect of IAS/IFRS adoption on earnings management (smoothing): A closer look at competing explanations", *Journal of Accounting and Public Policy*, vol. 35, no. 4: 352-394.

Christensen H. B., Lee, E., Martin, W. & Cheng, Z. (2015) "Incentives or standards: what determines accounting quality changes around IFRS adoption?" *European Accounting Review*, vol. 24, no. 1: 31-61.

Christensen, H. B., &Nikolaev, V. V. (2012) "Capital versus performance covenants in debt contracts", *Journal of Accounting Research*, vol. 50, no. 1: 75-116.

Cohen, D. A. & Zarowin, P. (2010) "Accrual-based and real earnings management activities around seasoned equity offerings", *Journal of Accounting & Economics*, vol. 50, no. 1: 2-19.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995) "Detecting earnings management", *The Accounting Review,* vol. 70, no. 2: 193-225.

Demaria, S., & Dufour, D. (2007) "The choice of accounting options during the transition to IAS / IFRS: what role for prudence"? *Comptabilité, contrôle, audit*, Vol. 3, no. 13:195-218.

Demaria, S., & Marty, F. (2007) "*Financialization, valuation and accounting information: from value creation to IFRS*", Research day, New perspectives in strategic management, Nice sophia antipolis.

Dietrich, D., Harris M., & Muller K. (2001) "The reliability of investment property fair value estimates", *Journal of Accounting and Economics*, vol. no. 30: 125-158.

Dinh T., Schulze, W., Eierle, B., & Steeger L. (2009) "Research and development, uncertainty, and analysts' forecasts: the case of IAS 38", *Journal of International Financial Management & Accounting*, vol. 26, no. 2: 2-40.

Elshandidy, T., & Hassanein, A. (2014) "Do IFRS and board of directors' Independence affect accounting conservatism?", *Applied Financial Economics*, vol. 24, no. 16: 1091-1102.

Fargher, N. & Zhang, J. Z. (2014) "Changes in the measurement of fair value: Implications for accounting earnings", *Accounting Forum*, vol. 38, no. 3: 184-199.

Garanina, T., Nikulin, E. & Frangulantc, O., (2016) "Earnings management and R&D costs capitalization: evidence from Russian and German markets", *Investment Management and Financial Innovations*, vol.13, no. 1: 77-85.

Guidara, R. & Boujelbene, Y. (2014) "Earnings management around research and development manipulation", *International Journal of Academic Research in Accounting, Finance and Management Sciences*, vol. 4, no. 2: 26-37.

Harris, O., Karl, J. B., & Lawrence, E. (2019) "CEO compensation and earnings management: Does gender really matters?", *Journal of Business Research*, vol. 98: 1-14.

Healy, P., & Wahlen, J. (1999) "A review of the earnings management literature and its implications for standard setting", *Accounting Horizons*, vol. 13 (4): 365-383.

Healy, P., & Palepu, K. (2001) "Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature", *Journal of Accounting and Economics*, vol. 31: 405-440.

Israeli, D. (2015) "Recognition versus disclosure: evidence from fair value of investment property", *Review of Accounting Study*, vol.20, no. 14: 57-1503.

Jeanjean, T. (2001) "Incentives and constraints to the management of earnings", *Comptabilité contrôle audit*, vol.7, no. 1: 61-76.

Jones, J. (1991) "Earnings management during import relief investigations", *Journal of Accounting Research*, vol.29, no. 2: 193-228.

Kang, S.H., & Sivaramakrishnan, K., (1995) "Issues in testing earnings management and an instrumental variable approach", *Journal of Accounting Research*, vol. 33, no. 2: 353-367.

Kerdrel (de), Y. (2004) "*Double entry accounting*". Les Echos, 14.

Kim, J.B, Chung, R., &Firth, M. (2001) "Institutional monitoring and opportunistic earnings management", *Journal and Corporate Finance*, vol. 8, no. 1: 29-48.

Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005) "Performance matched discretionary accrual measures", *Journal of Accounting and Economics*, vol. 39, no. 1: 163-197.

Ledouble, D. (2005) "Is accounting still the algebra of law?", *Revue Française de Comptabilité*, vol. 380:18-21.

Leuz, C., & Verrecchia R. (2000) "The economic consequences of increased disclosure", *Journal of Accounting Research*, vol. 38: 91-124.

Lev, B., & Zarowin, P. (1999) "The boundaries of financial reporting and how to extend them", *Journal of Accounting Research*, vol. 37: 353-385.

Liang, L., &Riedl, EJ. (2014) "The effect of fair value versus historical cost reporting model on analyst forecast accuracy", *Accounting Review*, vol. 89, 1151-1177.

Lo, K. (2008) "Earnings Management and Earnings Quality", *Journal of Accounting and Economics*, vol. 2-3, no.45: 350-357.

Mande, V., File R.G & Kwak, W. (2000) "Income smoothing and discretionary R&D expenditures of Japanes firms", *Contemporary Accounting Research*, vol. 17(2), 263-302.

Markarian, G., Pozza, L., & Prencipe, A. (2008) "Capitalization of R&D costs and earnings management: Evidence from Italian listed companies", *The International Journal of Accounting*, vol. 43: 246-267.

Marra, A. (2016) "The pros and cons of fair value accounting in a globalized economy: a never-ending debate", *Journal of Accounting, Auditing & Finance*, vol. 31, no. 4.

Marzuki, M. M., & Wahab, E. A. A. (2018) "International financial reporting standards and conservatism in the association of south East Asian nations countries: evidence from jurisdiction corruption index", *Asian Review of Accounting*, vol. 26, no. 4: 387-510.

Mirelana, Z., & Corina, J. (2012) "Embellishment of financial statements through creative accounting policies and options", *Social and Behavioral Sciences*, vol. 62: 347-351.

Muller, K. A., Riedl, J., &Sellhorn, T. (2008) *"Causes and Consequences of Choosing Historical Cost versus Fair Value"*, Harvard Business School.

Nelson M, Elliott J., &Tarpley R. (2002) "Evidence from auditors about manager's and auditors' earnings management decisions", *The Accounting Review*, vol. 77: 175-202.

Neter, J., Wasserman, W., Kutner, M. (1990) *"Applied linear statistical models"*. 2nd Ed., Richard E. Irwin, Inc., Homewood, IL.

Oz, I. O., & Yelkenci, T. (2018) "Examination of real and accrual earnings management: A cross-country analysis of legal origin under IFRS", *International review of financial analysis*, vol. 58: 24-37.

Paulo, E., Martins, E., & Corrar, L.J., (2007) "Detecção do gerenciamento de resultados pela análise do diferimento tributário", *Revista de Administração de Empresas*, vol. 47, no. 1: 46-59.

Ramanna, K. (2008) "The implications of unverifiable fair-value accounting: Evidence from the political economy of goodwill accounting*", Journal of Accounting and Economics*, vol. 45 (2-3): 253-281.

Ramanna, K. & Watts, L. (2012) "Evidence on the use of unverifiable estimates in required goodwill impairment", *Review of Accounting Studies*, vol. 17: 09-106.

Roychowdhury, S. (2006) "Earnings management through real activities manipulation", *Journal of Accounting and Economics*, vol. 42, no. 3: 335-370.

Seboui, S., &El Mir, A. (2006) "Innovation strategies, diversification and earnings management, *La revue des sciences de gestion*, direction et gestion 216 – Finance.

Shevlin, T. (1991) "The valuation of R&D firms with R&D limited partnerships", *The Accounting Review*, vol. 66, no. 1: 1-21.

Shipper, K. (1989) "Commentary on earnings management", *Accounting Horizons*, vol. 3, no. 1: 91-102.

Sougiannis, T. (1994) "The accounting valuation of corporate R&D", *The Accounting Review*, vol. 69: 44-68.

Storm, S. (2018) "Financialization and economic development: a debate on the social efficiency of modern finance", *Development and Change*, vol. 49, no. 2: 302-329.

Summers, L.H. (1986) "Does the stock market rationally reflect fundamental values?", *Journal of Finance*, XLI, vol. 3: 591-601.

Thesing, J. & Velte, V. (2021) "Do fair value measurements affect accounting-based earnings quality? A literature review with a focus on corporate governance as moderator", *Journal of Business Economics,* vol. 9, no. 2: 965-1004.

Tondeur, H. (2002) "Debt contracts clauses", *Revue française de comptabilité*, vol. 346 : 35-36.

Tsoligkas, F.N., &T salavoutas, I. (2011) *Value relevance of R&D in the UK after IFRS mandatory implementation*, University of Exeter Business School

UjkaniMiti, M., Myftaraj, E., Zenuni, B.R. (2018) "Creative accounting – some aspects of knowledge and implementation in Albania", *European Journal of Economics and Business Studies*, vol. 4, no. 1: 134-145.

Van Tendeloo, B., &Vanstraelen, A., (2005) "Earnings management under German GAAP versus IFRS", *European Accounting Review*, vol. 14, no. 1: 155-180.

Xiong Y., (2006) "Earnings management and its measurement: a theoretical perspective", *The Journal of American Academy of Business, Cambridge*, vol. 9, no. 1: 3-17.

Yao D.F., Percy, M., Stewart, J. & Hu, F. (2018) "Fair value accounting and earnings persistence: evidence from international banks", *Journal of International Accounting Research*, vol. 17, no. 1: 47-68.

Zehra, G.& Eroglu, K. (2017) "The political economy of international standard setting in financial reporting: how the United States led the adoption of IFRS across the world", *Journal of International Law and Business*, vol. 37, no. 3: 456-512.