

Mémoire du MASTER 104 FINANCE



Do the IFRS avoid earnings management in E.U. banks?

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September 2009

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I. Introduction

On September 17th 2009, Exane Equity Research published an analysis on Barclays PLC entitled “Can accounting deliver economic benefit?” in which it raises its EPS prospects due to an interesting transaction. Barclays made a loan to a fund personally controlled by the bank’s management, Protium, so the fund can buy it a bundle of assets at their fair value. The bundle is designed such that fair value expected losses from toxic assets should be offset by fair value gains on other assets. No provision should be written since the bundle has been designed such that the future value of future expected cash flows equals their book value. In Barclays’ balance sheet however, high credit risk assets that were mostly wrapped by monolines are replaced by a loan to Protium, with the bundled assets as collateral. Under the IAS 39 standard, loans that have been bought back following a securitization operation should be recorded at fair value, while loans that have been originated by the bank and can be valued at their historical cost. To sum up, although Barclays remains similarly exposed to credit risks before and after the transaction (the eventual reimbursement of the loan will depend on the bundle’s cash flows), this operation protects the bank from a short term, fair value-induced volatility of its earnings.

This example shows the extent to which the new accounting standards may offer some earnings smoothing opportunities for firms, and in particular for banks. On the contrary, the stated purpose of the international accounting standards IAS (International Accounting Standards) is to bring more transparency in the accounting reports, as well as comparability and better quality information. Their elaboration followed major accounting scandals, and illustrated a wish to limit some practices by restricting the number of accounting standards firms could access.

Earnings management accepts two definitions, a comprehensive one, and a strict one.

From a comprehensive standpoint, earnings management is the general term used to describe managers willingly taking advantage of accounting standards in order to lure stakeholders into a positively biased view of the firm’s financial situation (profitability, sustainability, solvability, efficiency). In this view, earnings management comprises all accounting data management methods, such as income smoothing, but also big bath accounting, window dressing, creative accounting and earnings management.

From a strict standpoint, earnings management only refers to a subdivision of accounting data management methods: those aiming at embellishing the firm’s earnings.

I focus on banks, because they are particularly concerned by this revolution in the valuation of their balance sheet components. The quasi totality of banks' balance sheet is made of financial instruments as defined in the standard. This sector is particularly interesting because on top of being highly regulated, it sustains to a certain extent the overall economy. Should a bank lose investors' or depositors' trust, it exposes the overall economy to instability. Some doubts about a bank's financial health could spur fears of illiquidity, contagion, and worries about the whole financial system. For these reasons, banks have particular incentives to manage earnings, both to meet regulatory constraints, and to reassure investors and depositors¹. The focus of the study will also be restrained on earnings management to meet market-based incentives.

According to Degeorge, Patel and Zeckhauser (1999), earnings management occurs to pursue three goals, ranked by priority: report positive earnings, report increasing earnings relative to the prior year, and meet analysts' expectations.

The main question in this paper is whether the adoption of new financial standards may lead to a new form of "accounting wandering" (this expression is borrowed from Barbu, 2004), linked to the valuation options allowed by the new standards. Therefore, this research aims at evaluating whether the IASB's stated objectives of enhanced transparency and information quality are indeed served by the standards it has issued.

This study is done from collective standpoint, that is, assesses the global existence of earnings management practices to meet the thresholds identified in Degeorge et al. (1999) before and after the implementation of the standard, and then evaluates the relative extent of the practice before and after the standard. It contributes to answering the question whether fair value earnings actually do bring more trustworthy information compared to historical cost earnings, or, on the contrary, also contain some irrelevant pieces of information, arising from earnings management.

I find that:

1. European banks tend to manage earnings to report profits both before and after 2005, although less so in the second period;

¹ This choice could be debated. Some earnings management studies discard financial institutions from their sample, arguing the direction of earnings management is unpredictable, due to a tension between abiding the regulator's prudential rules and looking profitable to investors.

2. Earnings are managed to report higher profits than the preceding year both before and after 2005, in the same manner;

3. There are signs of earnings management to exceed analysts' forecasts only after 2005.

An interesting development of this study would be to study in detail what methods can be used post-IFRS to manage earnings, and to evaluate the extent of their use, in order to establish a clear link with fair value accounting and to be of any use to regulators.

The subsequent part of this paper is organized as follows. Section 2 sets the framework of the study, defining the vocabulary and exposing the main results and methodology of previous studies. Section 3 describes the methodology of the empirical study whose results are displayed in section 4. Section 5 recaps the findings and put forward concluding remarks.

II. Definitions and main results in the literature

A. Earnings management literature

1. Definitions and incentives

The most widely quoted references for earnings management literature review include Healy and Wahlen (1999), Schipper (1989), Dechow and Skinner (2000) and Holthausen and Watts (2000). They refer to earnings management from a comprehensive standpoint, as the general act of deliberately taking advantage of accounting standards generality in order to deceive investors.

Schipper (1989) defines earnings management as:

“Definition: a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process).”

Healy and Wahlen (1999) offer a more precise definition that includes some incentives for managers to manage earnings:

“Definition: Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead

some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.”

These definitions stress three points:

- Earnings management differs from other GAAP-compliant uses of judgment in that it entails *an intention* to alter the understanding of counterparts, either stakeholders or co-contractors, in order to extract private benefits.
- The first incentive to manage earnings is to meet stakeholders’ requirements. “Stakeholders” refers to the market as a whole, and in particular analysts’ forecasts and investors expectations. This is because the primary users of accounting data are stock investors and financial analysts who value the stocks. This empirical study is focused on this type of incentives, since the IFRS regulation partly aims at aligning accounting and finance. These accounting principles are supposed to protect investors.
- The second incentive is to meet contractual requirements, such as management compensation contracts and lending contracts. The first are used to put managers’ interests in line with those of shareholders, while the second are used to protect bondholders and other creditors.
- Healy and Wahlen (1999) identify a third incentive to manage earnings, not explicitly stated in their definition, which is to align the accounting numbers with regulatory obligations. Industry regulations concerns accounting in the banking industry in particular, with regulations such as the Basel I and Basel II capital requirements. Other forms of regulatory incentives include abiding anti-trust regulations, and being under intense regulatory scrutiny.

2. Methods used to identify earnings management and results in the existing literature

a) Measuring unexpected accruals

Once the incentives to manage earnings have been identified, a common method to assess whether earnings have indeed been managed is to study *unexpected accruals*.

Accrual accounting results from the matching principle according to which revenues and expenses should be registered when incurred, and not upon cash collection, in order to better reflect the firm’s financial situation. Therefore, accrual accounting recognizes income and

expenses regardless of when the cash flows occur. There are four main categories of accruals: change in receivables, change in inventory, change in payables, and depreciation.

Accruals result from accounting choices by management. While some accruals are legitimately used to reflect the company's wealth generation, some of them might be used abusively, to meet one of the above mentioned incentives. In this respect, unexpected accruals may be a measure of the use of judgment on top of the expectable, GAAP compliant, accrual accounting.

As stated before, I restrain my focus on stock market incentives for banks to manage earnings. Numerous studies find that banks' earnings are managed for stock market purposes through *loan loss reserves*². According to Healy and Wahlen (1999), most papers also show the market is not lured by these manipulations. The stock market tends to negatively react to abnormally low, earnings increasing, loan-loss provisions in banks' financial statements, meaning that investors might not be duped by earnings management³. This is at least true concerning banks.

A recent popular topic of research, probably spurred by the elaboration of international accounting standards, consists in comparing accounting frameworks. Most studies focus on a IAS versus U.S. GAAP debate. The greatest difficulty faced by authors is to isolate the standard-induced effects in order to assess a clear causality relation between the results and the accounting environment.

In a 2003 study, Leuz, Nanda and Wysocki compare companies' accruals in a large set of countries, and find that the prevalent accounting standards do not relate with the extent of earnings management. Comparing companies reporting under German GAAP and IAS, Van Tendeloo and Vanstraelen (2005), show earnings management practices are similar. These results tend to show international accounting standards do not increase the quality of earnings from an earnings management perspective. Other authors find contradicting results. Barth, Landsman and Lang (2007) compare a broad range of countries who adopted the IAS and who did not, and find that IAS earnings are of better quality. Their findings thus indicate there are fewer earnings management and that losses are recognized on a timelier basis. Earnings management is measured by the volatility of net income growth, the extent of the ratio

² Healy and Wahlen (1999) quote Beaver et al. 1989, Moyer, 1990, Scholes et al. 1990, Wahlen 1994, Beatty et al. 1995, Collins et al. 1995, Beaver and Engel 1996, Liu and Ryan 1995, Liu et al. 1997

³ The same authors quote Beaver et al. 1989, Wahlen 1994, Beaver and Engel 1996, Liu and Ryan 1995, Liu et al. 1997

between the change in net income variance and the change in cash flows variance, the correlation between accruals and cash flows, and the frequency of small positive net income. Timely loss recognition is measured by the frequency of large negative net income.

b) Observing the distribution of earnings

Measuring abnormal accruals is a difficult task, often realized by using proxies for normal accruals, and subtracting them to the total accruals reported by the firm to make unexpected accruals appear. As pointed out by Healy and Wahlen (1999), this estimation is potentially noisy, and does not capture earnings management executed through the reduction of cash flows such as R&D or advertising expenditures.

A more recent empirical methodology, developed by Burgstahler and Dichev (1997), and Degeorge, Patel, and Zeckhauser (1998) consists in observing the empirical probability distribution function of earnings, hence avoiding studying the detail of potentially irregular accruals.

These studies rely on the finding that stock markets value the firms that display continuous growth in earnings, and react positively to the meeting or beating analysts' forecasts. This is documented in a study by Barth, Elliott and Finn (1999), showing that firms reporting continuous growth in annual earnings are priced at a premium; that this premium increases with the length of the string and decreases when the string is broken.

The main results of studies using this methodology to highlight earnings management practices as a response to stock market incentives are the following:

- Both Burgstahler and Dichev (1997) and Degeorge, Patel and Zeckhauser (1999) remark that companies tend to report more often small gains than losses. The resulting distributions of earnings have a positive asymmetry, meaning that there are more companies with better earnings than expected, relative to companies displaying worse earnings. This result is also true regarding reported earning increases relative to earnings decrease relative to the prior year. This is interpreted as a sign of earnings management to avoid reporting bad news (losses or earnings decreases)
- Degeorge, Patel, and Zeckhauser (1999) show that this is also true regarding the distribution of earnings surprises, defined as the difference between reported

earnings and the consensus analysts' forecasts. Analysts' forecasts are used as a proxy for market's expectations.

Another method, developed by Myers and Skinner (1999) also aims at avoiding studying the detail of accruals, and show that firms try to meet certain targets using a time series approach. They observe that more firms than expected display long strings of consecutive EPS increases, showing that earnings are managed to beat the former periods'.

The advantage of these methods is that they do not entail a detailed study of the accruals, and show a global behavior of earnings management among firms when confronted to specific situations, rather than a firm-specific accrual situation. They hence let the researcher appraise the aggregate extent of earnings management in the economy. However, they do not put forward what specific earnings management methods are used, what amounts are at stake, what is the effect on efficient resource allocation, and what would be the effect of additional norms. Therefore, they might be of limited use for standard setters.

B. The “Accounting Bing Bang”

1. Theoretical background of the IFRS

In 2005, firms incorporated in the European Union underwent what has been called an « Accounting Big Bang » by a number of observers (Colasse, 2001): the application of the IASC standards.

All companies publicly offering their stocks have to prepare their financial statements according to these standards starting January 1st 2005 (an exception is made for companies who only publicly offer their bonds, and those who are publicly quoted but already use a commonly accepted international standard. Those firms may switch to IFRS by January 1st 2007).

The creation of a unified European accounting framework is aimed at enhancing financial information transparency, comparability, and quality, as a response to the growing global financial markets and media attention-drawing financial affairs. The multiplicity of accounting standards across the world may have led companies to indulge in what has been called “accounting wandering” (Barbu, 2004), that is, making the best use of the variety of available accounting tools in order to make financial statements as appealing as possible.

2. The economic reality has the priority over the legal appearance

The main changes in the accounting principles are: priority of the balance sheet and the statement of cash flows over the income statement (static accounting standpoint); reduction of historical cost principle and prudence principle application; extension of the use of fair value accounting. These changes reflect a trend towards replacing a valuation based on standards and conventions by an economic, realistic (at least in its purpose) approach. The income statement now takes into account the variations in the balance sheet accounts. The balance sheet becomes the foremost financial statement, and now integrates intangible assets, as well as formerly off-balance sheet accounts. The goal is to make the balance sheet accurately reflect of the economic situation of the firm, considering its value if it had to be cashed immediately.

Fair value accounting, embodied by the IAS 32 and 39 standards, has been the crux of a number of debates. Their underlying ideas are similar to what has been done in the United States, where the first occurrence of non-historical cost accounting appeared in the 1980's, consecutive to the savings banks crisis.

The IAS 32 standard (published in 1995) defines fair value and market value, as well as criteria according to which a financial instrument may be classified. Fair value is either the market value of an asset when an active market exists, or, if it does not exist, an estimator based on valuation models.

Inspired by the SFAS 107 (published 1991, imposes fair value for financial instruments) and SFAS 115 (published in 1993, compels companies to value some assets at fair value in the balance sheet, and not only in the annex) the IAS 39 includes the following dispositions:

- Financial instruments owned with the prospect of trading them must be valued at their fair value;
- Financial instruments that cannot be traded (such as bank loans or deposits) must be valued at historical cost.

While the IAS 39 standard does not exclusively regard financial institutions, its impact on this ample of European companies should be significant, as the majority of the elements in their balance sheet qualifies as a financial instrument in the sense of the standard.

Barton (2001) finds that financial derivatives are used as a substitute of accrual choices to smooth earnings in non financial, non regulated firms. A switch to fair value accounting

should lead managers to abandon this volatility reduction method in favor of accruals based earnings management. In other words, that would mean that, since reporting for hedging methods under fair value accounting would actually make the earnings more volatile, there is a risk that managers consequently turn to earnings management, using accruals, to smooth earnings. Moreover, as the Barclays case detailed in the introduction indicates, there is a risk that companies reclassify their assets such that they are valued in the most convenient manner, both for prudential ratios-compliance purposes and market-oriented purposes. They could also adjust their model to achieve these goals.

On the other hand, making financial reporting more transparent may help the investors see through earnings management. Hirst and Hopkins (1998) show that analysts detect earnings management more easily when the components of comprehensive income are clearly stated.

III. Data and construction of the sample

The study is exclusively focused on banks, as bank managers have strong incentives to manage earnings and their institutions' health have a considerable impact on the economy.

My data set consists of annual data on 110 European banks providing partial or complete data over the 2002-2006 period. The time interval is chosen such that effects from the tech bubble explosion and *subprime* crisis are excluded. In the European Union, over the 2002-2006 time frame, each company may choose the periodicity of its result publication, with a minimum yearly publication. I use annual data because it is the smallest common financial reporting frequency among European banks. I drop banks whose fiscal years do not end in December in order to have synchronous observations. My sample (supposed to be the whole population) is taken from the Thomson I/B/E/S database, using the Europe/financials filter. This does not include asset managers and venture capitalists. Focus is restrained on the intermediation activity. I download annual reported earnings and EPS, as well as the earnings forecasts from analysts.

I download each fiscal year the earnings forecast for the year ending, and use the last quarter average forecast as the consensus expectation proxy because:

- (1) There may be a semiannual or quarterly publication of earnings and I want the smallest common publication frequency;
- (2) I want a timely expectation when earnings are announced.

In the I/B/E/S documentation, the mean is defined as “the arithmetic average for the fiscal period indicated”, whereas the “flash mean” is defined as the arithmetic average of “the number of estimates that have been received over the past four weeks, for the fiscal period indicated.” I download the mean estimates as of the end of each fiscal year, which include all past forecasts, and retain the latest available. When the last quarter mean forecast is not available, I use the last available mean forecast.

As stated in DeGeorge, Patel and Zeckhauser (1999), according I/B/E/S, earnings forecasts do not include extraordinary items. They therefore use EPS before extraordinary items to make them comparable to the forecasts. While this is taken care of by I/B/E/S for the U.S and Canadian firms, whose earnings reports are adjusted to be comparable to estimates, this is a different matter for non-North American companies. I/B/E/S only receives the reported earnings from newswires such as Bloomberg or Reuters, newspapers and contributing brokers, and then put them as they are in the database. This means finding positive earnings surprises may mean accounts are managed to match the forecast through accruals, or using extraordinary items. But it may also mean an extraordinary event has indeed occurred. To this extent, my results may be debatable.

I study the distribution of earnings per share, earnings per share growth or decrease year on year, as well as earnings surprises relative to the consensus forecast. For each of these variables, I need to make sure observations follow similar distributions, even though the banks in the sample vary a lot from a firm size point of view.

In their 1999 paper, DeGeorge, Patel and Zeckhauser point out that EPS, EPS growth and earnings surprises should not be made homogeneous by dividing them by price per share or assets per share. This would lead to results with many decimals, which is not desirable as we consider numbers rounded to the closest eurocent. The rounding would result in a distortion of the observations, and in particular of the frequency of observations equal to zero, because all actual observations equal to zero will remain so after they are deflated, but an additional number of null observations would arise due to the rounding.

The authors then remark that when firms belonging to extreme price percentiles are excluded, observations become homogeneous across the price ranges, both in terms of location and dispersion. Location is measured by the median in each price percentile, and dispersion is measured by the interquartile range in each percentile.

As shown below, a similar result appears when I exclude the 20 last percentiles of my sample. Here, all observations have been translated into euros, since no effect may arise from the exchange rate and this allows the comparison of data expressed in the same unit.

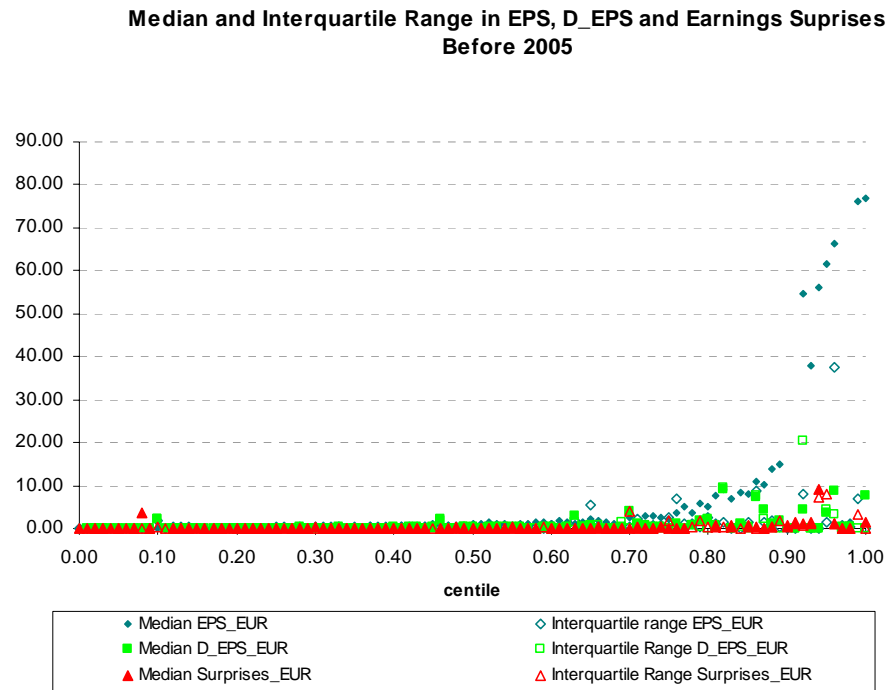


Figure 1 Median and Interquartile range in earnings per share (EPS), EPS growth/decrease since the past year (D_EPS) and Earnings surprises before 2005

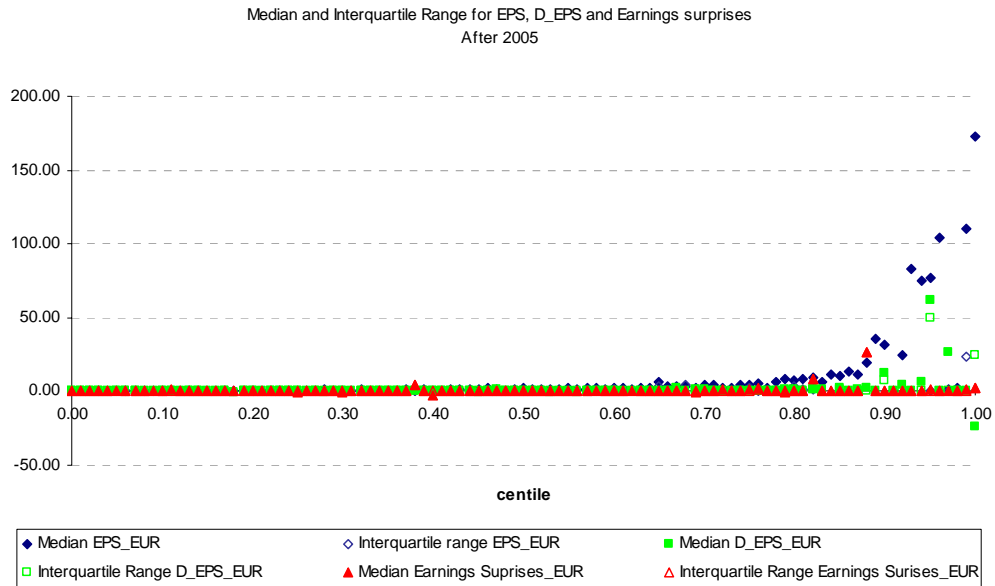


Figure 2 Median and Interquartile range for EPS, EPS growth or decrease since the prior year and earnings surprises after 2005

For each sub-period before 2005 and after 2005, and for each interesting data series (EPS, EPS variation year on year and Earnings Surprise), I plot the median data (in full points) and the corresponding interquartile range (in empty figures) according to the price percentile. The three series appear fairly linear across price percentiles, except for those belonging to the twenty last percentiles.

I therefore exclude from my study the observations in the twenty last price percentiles in each series, resulting in sample sizes varying from 78 to 218 observations depending on the data series.

IV. Results

I assess whether managers tend to manage earnings to exceed the three thresholds identified in Degeorge et al. (1999):

- i. “Report profits”: There should be a discontinuity of the earnings per share empirical distribution around the 1 eurocent profit threshold.
- ii. “Sustain recent performance”: There should be a discontinuity in the empirical distribution of earnings growth since the former fiscal year (in euros) around the 0 eurocent threshold
- iii. “Meet analysts’ expectations”: There should be a discontinuity in the empirical distribution of earnings surprises, defined as the difference between the consensus forecast and the reported EPS, around the 0 eurocent threshold.

In each data series, I assess the existence of thresholds, in other words, of a discontinuity in the distributions, using the test statistic τ developed in Degeorge et al. (1999).

I construct empirical distributions using the bins width criterion used in Degeorge et al., and recommended in Silverman (1986) and Scott (1992). In order to get the bin width, I compute for each data series the bin width as: $2 \times \text{InterquartileRange} \times n^{-1/3}$, n being the number of observations. To make the pre 2005 sample and the post 2005 sample comparable, I always use the same bin for both (the smallest, in order to limit information loss). Bin width varies from 35 eurocents to 3 eurocents. An observation is included in a bin if it is greater or equal to the lowest bound and smaller than the highest bound.

The method relies on the idea that if a firm just meets a threshold, then it can be suspected of managing earnings to match that criterion. This is why the study focuses on a small observation window around the threshold (5 observations before and after it)⁴. Firms that beat largely or miss the target are considered not to manage earnings.

A. The “report profits” threshold

I study the distribution of earnings first, since this data is the one that attracts the most focus from investors. Moreover, Degeorge et al. show this is the first and foremost criterion companies will try to abide to. Should they be in a difficult year, companies will try their best not to report losses.

Figure 3 displays the distribution of banks EPS before 2005, that is, in the 2002-2004 time lapse. I expect a discontinuity at the 0.01 euro threshold, since companies in difficult years will use earnings management methods to report the smallest profit possible, and push as much as they can. As a consequence, if there are earnings management practices, a smaller than expected amount of companies will report small losses, and a larger than expected amount of companies will report small positive earnings.

⁴ The choice of the interval size is inspired from Degeorge et al.. and may seem arbitrary. I also tested with a 10 observations before and after the suspected threshold and get similar results.

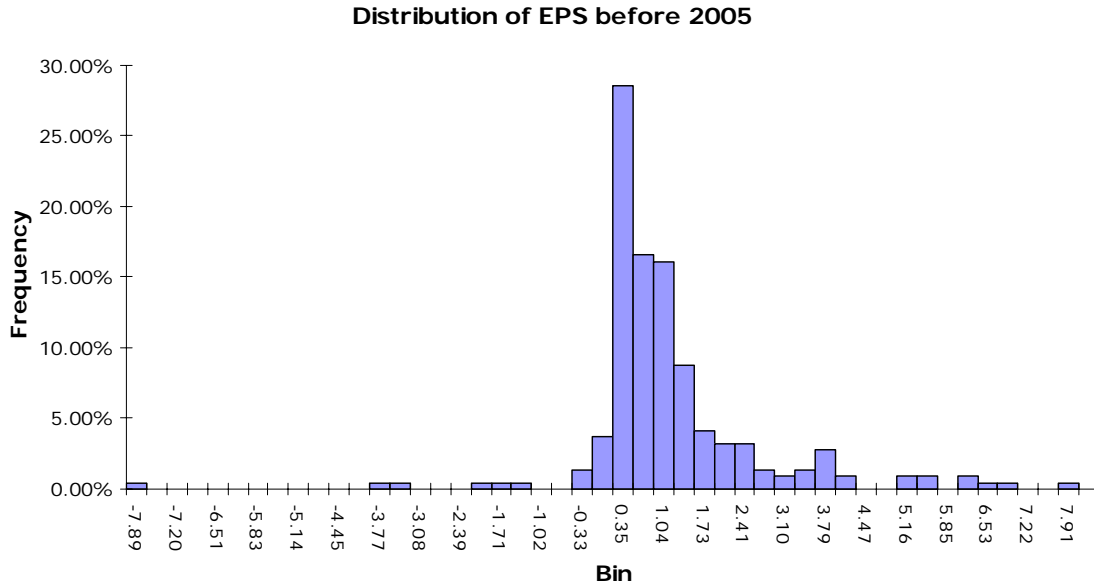


Figure 3 EPS empirical frequency before 2005 – the bin width is 0.35 euro – the suspected threshold equals the peak

A peak is showing for the $[0.01, 0.35[$ euro interval, and the distribution looks less smooth to the left of the peak than to the right. Here, the peak matches the threshold. Let T be the threshold and P be the peak (here, $T=P$).

The τ value test should be realized in a small window including $2r + 1$ bins (r bins before the threshold, r bins after it). I choose $r=10$, and compute series of the differences between the logs of empirical frequencies. Logarithm is used to improve the homogeneity of the variance across the observation window. Let $\Delta p(x_n)$ be the points in this series (they are in fact $\Delta \log(p(x_n))$ but I use $\Delta p(x_n)$ to simplify the writing). It approximates the probability density function of the distribution.

If the observation is the peak, the slope before is likely to be positive, and the slope after is likely to be negative. For each point $p(x_n)$ in the window ($n=1$ to 21), I compute the statistics $\Delta' p_j(x_n) = \Delta p(x_{n+j}) - [-1 \times \Delta p(x_{n-j})]$ ⁵ for $j = 2$ to 10 . This is the difference between the slope of the density function j points after the observation, and $j+1$ points before, adjusted for the sign. Degeorge et al. seem to use this asymmetric region to “control for global local skew”. I assume this means that this avoids any insignificant effect arising from asymmetries just around the observation that would not reflect the overall density shape. I then compute for

⁵ This is the formula in Degeorge et al., case A2, the threshold equals the peak.

each point n the average and the standard deviation of the $\Delta' p_j(x_n)$, $j=2$ to 10 . This average is the proxy of what $\Delta' p_1(x_n)$ should be. $\Delta' p_1(x_n)$ is the difference between the slope in the $[p(x_n), p(x_{n+1})]$ interval, and the slope in the $[p(x_{n-2}), p(x_{n-1})]$ interval, adjusted for the sign. We assess whether $\Delta' p_1(x_n)$ is unusual using the statistic $\tau_{T=p}[p(x_n)] = \frac{\Delta' p_1(x_n) - \text{mean}[\Delta' p_j(x_n)]}{\text{std}[\Delta' p_j(x_n)]}$. According Degeorge et al. and based on

their simulations (simulating EPS as Gaussian with the same features as their sample), $\tau_{T=p}$ is smaller than 2.00 in 95% of the cases. I use the same critical value as them.

Let H_0 be: the $\Delta' p_1(x_n)$ series is smooth and homogeneous. If this is the case and the EPS are roughly Gaussian, the $\tau_{T=p}$ statistic should be below 2.00 with a 95% confidence level. On top of comparing the $\tau_{T=p}$ values to some critical value, I compare them to each other, so I do not only rely on normality (they could follow another smooth distribution than a Gaussian).

The value of the test statistic at the bin just before the threshold $\tau_{T=p}[p(x_{T-1})]$ is the highest of all, and at a value of 8.578 it is significantly higher than the critical value of 2.00 at the 95% confidence level. H_0 is thus rejected, the distribution is not smooth around the threshold T , that is, the $[0.01, 0.35]$ euros EPS interval. Degeorge et al. also find another threshold at the 0 cents level. No null observation appears in this sample.

Finding a significant value just before the threshold is compatible with an observation of figure 3: it means that the slope of the density between the $[-0.33, 0.01]$ euros interval and the threshold is significantly higher than the slope two bins before the threshold. In other words, there is a “jump” between the threshold and the interval just before it, while the density function is otherwise smooth, which may be considered as a clue of earnings management.

These results confirm that risk-averse banks, pressured to report positive EPS, tend to manage earnings to meet this market based target.

Figure 4 displays the distribution of banks' EPS after 2005, that is, in the 2005-2006 time lapse.

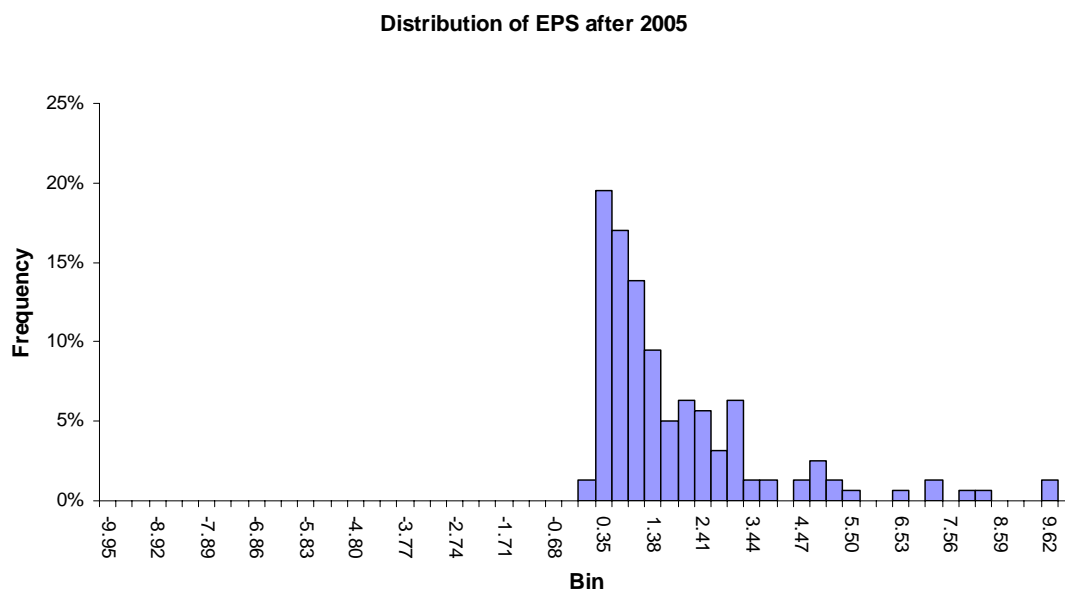


Figure 4 EPS empirical frequency after 2005 – the bin width is 0.35 euro – the suspected threshold equals the peak

After 2005, the distribution of EPS is all the more striking that no E.U. bank accounted for in I/B/E/S has reported negative earnings.

Again, comparing $\tau_{T=p}$ values around the $[0.01, 0.35[$ euros bin which is the suspected threshold T , $\tau_{T=p}[p(x_{T-1})]$ is the highest of all. Its value is 4.781, well above the 2.00 critical value, what lets me reject the smoothness hypothesis around T .

One could argue that this is not a sign of earnings management, but rather a manifestation of an economic trend at that moment, benefiting the financial sector. If that was the case, it is likely that a peak would arise *after* the 1 eurocent threshold, and not at that precise point.

Now that the existence of earnings management is asserted both before and after 2005, a comparison between the two samples should help to know whether the presence of IFRS standards mitigated the practice.

Figure 5 displays both density functions. Already, the pre-2005 distribution seems much more leptokurtic than the post-2005 distribution.

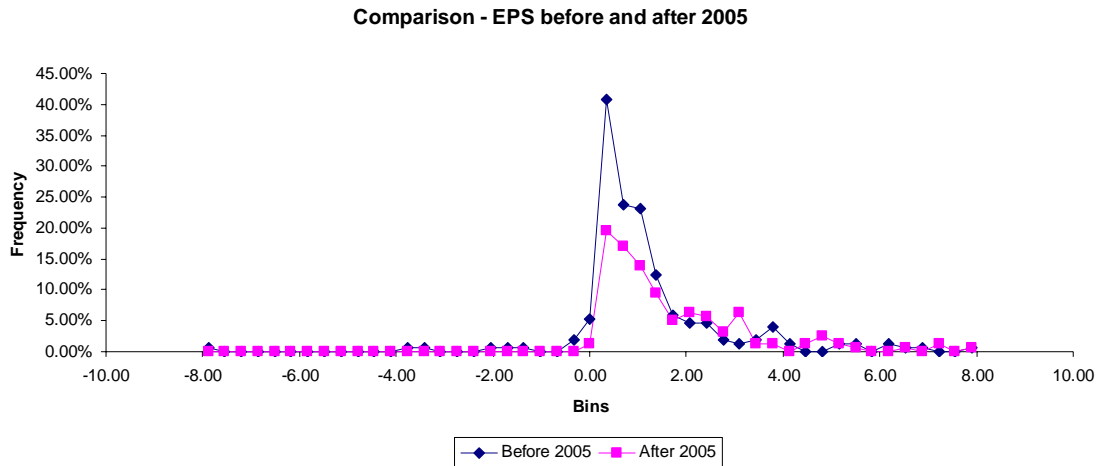


Figure 5 Comparison of EPS empirical frequencies before and after 2005

A non-parametric test should help and confirm the intuition earnings management are mitigated post 2005.

The Kolmogorov-Smirnov test aims at knowing whether two samples (sample X before treatment and sample Y after treatment) belong to the same population with regard to earnings management. It computes D as the maximum distance between the two samples' frequencies for the same interval. The bilateral test is the most adapted because distributions may differ in many ways (not only their central tendency). It gives a D as an absolute value.

H0 is: the two samples belong the same population

H1 is: the values from one of the samples are above those of the other sample.

The results are as follows.

Kolmogorov-Smirnov test on two samples / Bilateral test :

D	0.202
p-value	0.001
alpha	0.05

p-value is computed according to the exact method

Figure 6 Kolmogorov-Smirnov test on the pre-2005 sample and the post-2005 sample. This test aims at confirming or rejecting the null hypothesis of probability density function equality between the two samples.

The p-value is below the 5% confidence level alpha, meaning that we have around 0.1% risks to mistakenly accept H1. H0 is thus rejected, what confirms there is a change after 2005.

Is this enough to draw a cause to consequence relation with the IFRS? In our case, the post 2005 sample's distribution, although less leptokurtic, is more skewed towards the positive side than the pre 2005 sample. Firms that do much better than the threshold are not suspected of earnings management, but did indeed perform well. A possible explanation for this result may be that in the 2005-2006 period, banks do better than the years before. They thus would be in less need to manage earnings to match the “report profits” threshold.

B. The “sustain recent performance” threshold

Degeorge et al. show that once firms report positive earnings, their following concern is to report better profits than the former year.

The preceding section shows that banks tend to manage earnings both before and after 2005, although less so in the last period. It is then possible that in both cases, if positive earnings are insured, they will push as much as possible to do better than the prior year. This result would be consistent with Barth, Elliott and Finn (1999), who find that firms who display long strings of earnings increases are traded at a premium.

Figure 7 displays the distributions of EPS growth/decrease year on year (noted D_EPS), for the 2002-2005 period.

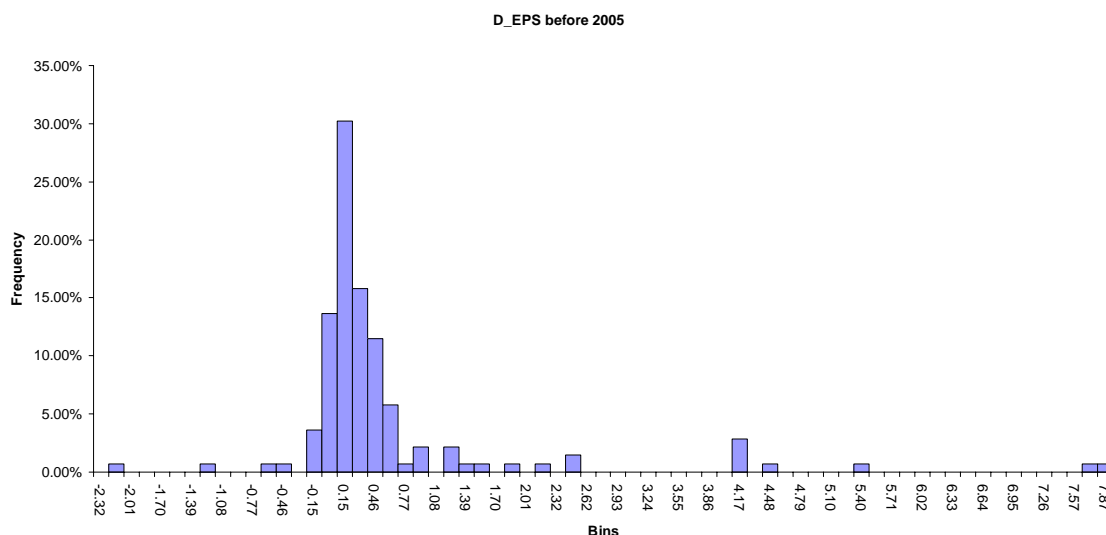


Figure 7 EPS growth/decrease since the prior year (D_EPS) empirical frequency before 2005 – the bin width is 0.15 euro – the suspected threshold equals the peak

The peak of the distribution appears to coincide with the [0.00,0.15[euros bin, which is the suspected threshold.

Statistic $\tau_{T=p}[p(x_{T-1})]$ is highest at the level of the threshold; worth 2.717 it is higher than the 2.00 critical value. It is the highest $\tau_{T=p}$ in the distribution.

We can thus infer that earnings are managed to beat the preceding years' EPS in the pre-2005 period.

Figure 8 shows the empirical distribution of D_EPS for the 2005-2006 period.

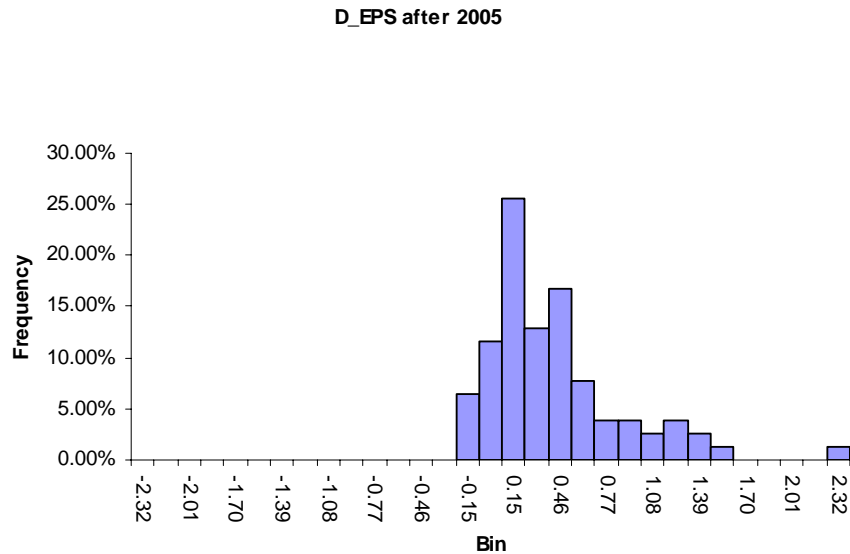


Figure 8 EPS growth/decrease since the prior year (D_EPS) empirical frequency after 2005 – the bin width is 0.15 euro – the suspected threshold equals the peak

The maximum of the distribution matches the suspected threshold, occurring at the $[0.00, 0.15[$ euros interval. $\tau_{T=p}[p(x_{T-1})]$ is also highest just before the peak. It is worth 6.120, above 2.00, meaning there is a significant “jump” between the $[0.00, 0.15[$ euros interval and the $[-0.15, 0.00[$ euros interval.

This result indicates banks still manage earnings to do better than the year before, after the IFRS standards have been implemented.

In order to assess if there is any difference before and after the standard, I plot the distribution of D_EPS in figure 9.

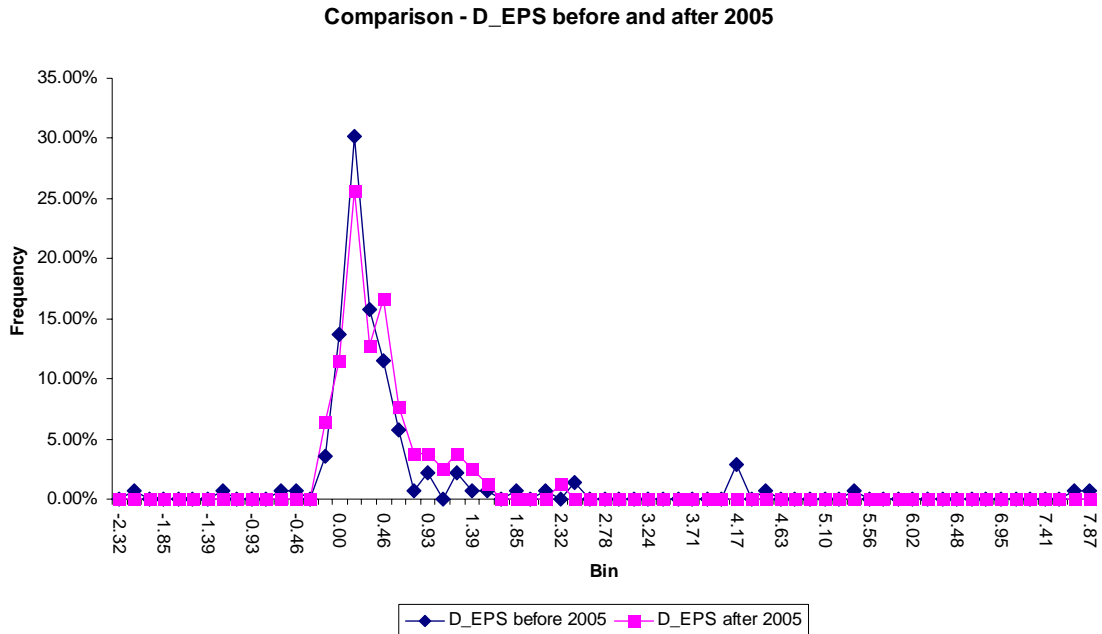


Figure 9 Comparison of D_EPS empirical frequencies before and after 2005

Both distributions seem to superpose rather well, and I conjecture there is no change after the standard has been put into practice.

The Kolmogorov-Smirnov test confirms this intuition.

Kolmogorov-Smirnov test on two samples / Bilateral test :

D	0.131
p-value	0.297
alpha	0.05

p-value is computed according to the exact method

Figure 10 Kolmogorov-Smirnov test on the pre-2005 sample and the post-2005 sample. This test aims at confirming or rejecting the null hypothesis of probability density function equality between the two samples.

H0 is: both samples have the same probability distribution function.

The p-value is above the confidence level of 5%, so H0 is not rejected. Both the pre-2005 and the post-2005 samples seem to be alike, and the existence of a new standard did not influence earnings management practices.

The study of the “report profits” threshold shows banks reported more positive earnings after 2005, and thus maybe did not need to manage earnings to meet this first threshold as much as before. Now, there is a sign they still manage them in the same way as before to report

increasing profits. This means the implementation of the new standard did not undermine the practice. There is no clue however that they provided additional tools for managers.

C. The “beat analysts’ forecasts” threshold

The third most important criterion managers try to meet is to beat analysts’ forecasts. The importance of this threshold is confirmed by studies showing how the market tends to positively react to a firm meeting or beating the consensus forecast⁶.

Earnings surprises are defined as the difference between the firm’s reported earnings and the consensus forecast. The consensus forecast is defined as the average analyst forecast for the next period (that is, the end of the running fiscal year).

Figure 11 shows the distribution of earnings surprises before 2005.

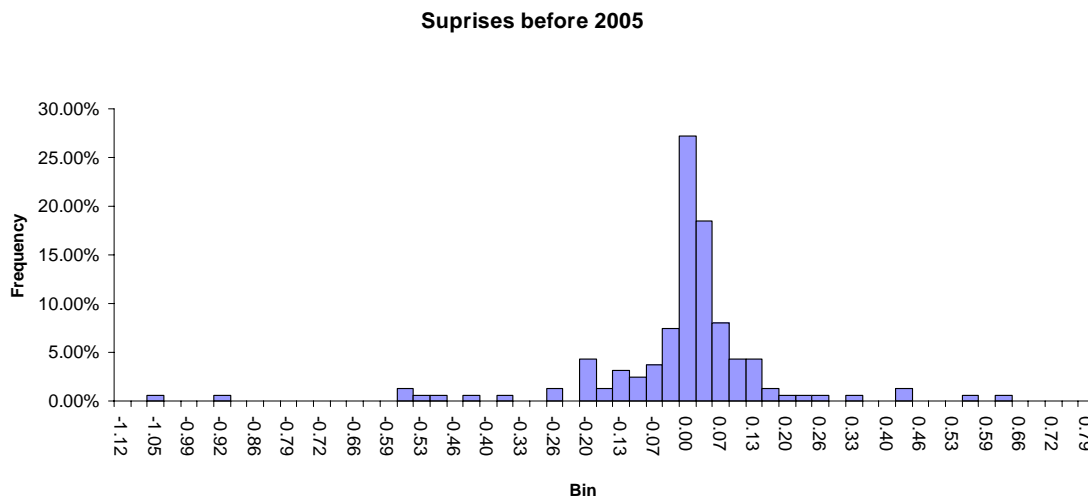


Figure 11 EPS surprises empirical frequency before 2005 – the bin width is 0.03 euro – the suspected threshold equals the peak

The peak of the distribution is the [0.00,0.03[euros interval, which is also the suspected threshold.

The $\tau_{T=P}$ statistic is highest at the interval just preceding the threshold, but it is 1.695, below the 2.00 critical level. The “jump” is not significant enough to suspect European banks from managing earnings.

⁶ Bartov, Givoly and Hayn, 2000, working paper, show that firms who do at least as well as what analysts expect enjoy a return premium, even though this EPS performance is suspected to result from earnings or expectations management

Things are a different matter for the post-2005 sample, as displayed in figure 12.

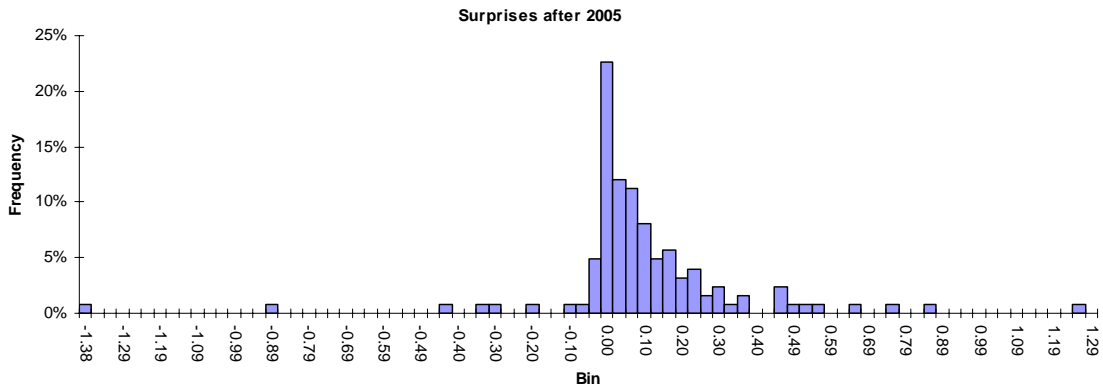


Figure 12 EPS surprises empirical frequency after 2005 – the bin width is 0.03 euro – the suspected threshold equals the peak

The peak also occurs for the $[0.00, 0.03[$ interval, coinciding with the suspected threshold.

The statistic $\tau_{T=p}$ reaches a maximum at the interval just before the threshold, with a significant level of $\tau_{T=p}[p(x_{T-1})] = 3.993$.

These results suggest that, although there is no sign of banks managing earnings to meet analysts' expectations before 2005, they are suspected of doing so after 2005.

The Kolmogorov-Smirnov test also indicates the two samples do not have the same probability distribution function.

Kolmogorov-Smirnov test on two samples / Bilateral test :

D	0.309
p-value	< 0,0001
alpha	0.05

p-value is computed according to the exact method

Figure 13 Kolmogorov-Smirnov test on the pre-2005 sample and the post-2005 sample. This test aims at confirming or rejecting the null hypothesis of probability density function equality between the two samples.

The p-value is well below the 5% alpha, so the null hypothesis of distribution identity has to be rejected.

V. Conclusion

To sum up, these results show that:

1. European Banks tend to manage earnings to report profits both before and after 2005, but maybe less so in the second period;
2. Earnings are managed to report higher profits than the prior year both before and after 2005, in the same manner;
3. There are signs of earnings management to exceed analysts' forecasts only after 2005.

Earnings management seems to have diminished in the first case, which is the most important of the three thresholds, while they seem to be at least equal to what was done before regarding the two other thresholds.

A possible explanation for this is that earnings need not be managed to report positive earnings after 2005, since they would have been positive anyways. However, banks still needed to do better than the past year and, above all, to meet analysts' forecasts that are constantly adjusted to the economic situation.

The idea developed in Degeorge et al. that firms manage earnings by "borrowing" from future earnings is consistent with this explanation. Banks managed earnings before 2005 to report profits as well as to do better than the year before. All other parameters remaining equal, the following's period EPS should consecutively be lower. However, this is not the case. The post-2005 distribution is positively skewed. This may indicate that another factor positively influenced banks EPS after 2005.

These results show that earnings management practices persist after the implementation of the IFRS. The standards do not seem to have undermined this behavior. Now that this study asserted the perseverance of the phenomenon, one may wonder how earnings are managed under the new standard. The question whether they might offer a new array of tools for managers to embellish results, on top of classical accruals, should be further studied in a thorough analysis of the suspected companies. Another interesting topic of study would be to assess whether investor are less duped by earnings management following the adoption of IFRS standards.

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