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Earnings management and goodwill impairment: An empirical analysis in the Italian M & A context

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Abstract

Purpose – The purpose of this paper is to understand whether managerial behavior in impairing goodwill arising from M&As has changed after the adoption of IAS/IFRS, searching for evidences of earnings management (EM) practices. Thus, our goal is to provide a response to the following research questions. Are goodwill impairments used by listed firms' managers to manipulate earnings? If so, what kind of EM practice is mostly used?

Design/methodology/approach – In this paper the authors tested the following hypothesis: *H1*. In the year of the deal's closure and in the following four years, the management detects impairment of goodwill in difformity with the previous Italian regulations and related accounting practices. Moreover, the authors tried to determine, for each considered firms, potential symptoms of typical DEM practices widely debated in the financial accounting literature (income smoothing, income minimization, income minimization, or big bath accounting).

Findings – Our analysis does not prove evidence of certain EM practices, but it highlights very clearly that, after the adoption of IAS/IFRS, managers' behavior has deeply changed. Moreover, the analysis shows that there is no univocal choice in favor of a specific EM practice and that every firm pursues its own "strategy."

Originality/value – Considering the importance of the topic from both the perspectives of managerial (with regard to M&As valuation processes) and financial accounting (with regard to intangibles valuation fulfilled by applying the impairment test instead of the amortization), this work aims to provide a multi-dimensional contribution to the current debate.

Keywords Intellectual capital reporting, Intellectual capital, Strategy, Accounting

Paper type Research paper

1. Introduction

Acquisitions are common phenomena still extensively debated at both academic and practitioners' level. They are typical means of internationalization strategy adopted by firms aiming to expand their scope or achieve new resources.

In management studies, acquisitions may be typically examined by looking at three distinct processes: the pre-acquisition, the negotiation, and the post-acquisition process (Jemison and Sitkin, 1986a, b; Haspeslagh and Jemison, 1991; Haspeslagh and Farquhar, 1994; Birkinshaw *et al.*, 2000). In particular, while most managerial interest has typically focussed on post-acquisition processes, we still lack of a sufficient amount of studies regarding pre-acquisition processes (due diligence) (Marks and Mirvis, 2001; Howson, 2003; Shimizu *et al.*, 2004). As commonly known, due diligence represents the short timeframe potential acquirers typically devote to the examination of their possible

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targets for an acquisition (Lebedow, 1999). Such an examination – regarding crucial aspects such as legal, fiscal, cultural, accounting and strategic issues – is essential for determining the "right" price of the deal (the so-called premium price) and, therefore, to attribute the appropriate value to the goodwill generated by the target firm (Angwin, 2001; Cullinan *et al.*, 2004; Puranam *et al.*, 2006; Harding and Rouse, 2007; Lajoux and Elson, 2010). In particular, evidence seems to prove that acquiring firms tend to adopt several instruments in order to determine these values, such as the complex practices of earnings management (EM).

Earnings management is a relevant topic in financial accounting studies. The phenomenon of intentional manipulation of financial reporting results has been widely studied from the early 1960s under the comprehensive label of EM theory (Beaver, 1968). The literature definitions regarding EM practices (Healy and Wahlen, 1999; Mohanram, 2003; Butler *et al.*, 2004), even though diverging in the different configurations given to the phenomenon, agree upon the assumption that the likelihood to "build up" accounting numbers diverging from a true and fair view might originate from a certain degree of managerial discretion. Indeed, several studies (Francis *et al.*, 1996; Hilton and O'Brien, 2009; Szczesny and Valentincic, 2013) show how a certain degree of discretion related to asset valuation has been widely adopted to reach earnings levels otherwise unreachable.

Among such assets, goodwill (Shalev *et al.*, 2010) proves to determine substantial impact on investment profits and share value; when this behavior generates grey or black EM (Ronen and Yaari, 2008), such policy is certainly considered as fraudulent.

Numerous authors (e.g. Hamberg *et al.*, 2011) analyzed the impact of IAS/IFRS adoption on goodwill level in financial reporting, highlighting the fewer cases of its depreciation under IAS 36 rules. This is probably due to the adopted valuation criteria with regard to assets and Cash Generating Units (CGUs) that, though licit, are not neutral. Other scholars (such as Zang, 2012) observed how goodwill might be used for real and/or discretionary EM, providing evidence of a mixed use of both manipulations.

In view of the aforementioned issues and of the higher discretion managers have on goodwill write-offs (especially after the adoption of IAS/IFRS rules), the authors decided to focus on M&As. Indeed, they represent strategic investments that severely impact on the acquiring firm's accounting data, with major effects on intangibles and, mostly, on goodwill. Such effects are particularly relevant when considering the different disclosure rules stated by IAS/IFRS, which – far from being perceived as tools of real harmonization – does not seem to be able to face the loss of reliability of financial information.

Under IFRS, impairment test rules imply a wide level of managerial discretion. This might reduce the financial statement transparency/reliability, causing information asymmetries between management and stakeholders.

The aim of the paper is to understand whether managerial behavior in impairing goodwill arising from M&As has changed after the adoption of IAS/IFRS, searching for evidences of EM practices. Thus, the authors' goal is to provide a response to the following research questions:

RQ1. Are goodwill impairments used by listed firms' managers to manipulate earnings?

RQ2. If so, what kind of EM practice is mostly used?

To develop their analysis, the authors selected a sample of firms publicly listed in the Italian stock market which completed (as acquirers) M&A operations during the

timeframe 2006-2010. Moreover, they considered firms whose goodwill represents a relevant asset. In order to be relevant, they decided to include in the analysis only companies whose goodwill was higher than 10 percent of total assets in at least one of the years under observation.

While the authors are conscious of the Italian stock market secondary importance at global level, their sample selection may be explained by the fact that Italy has been severely impacted by the current financial crisis, and therefore goodwill impairments might have been considered as a strategic tool through which to manipulate accounting numbers; for this reason and in order to face such a widespread issue, also the national valuations standard setter (*Organismo Italiano di Valutazione – OIV)* has rapidly approved in those years an ad hoc document entitled "Goodwill Impairment Testing in a Time of Economic and Financial Crisis – Guidance" (2012) to offer guidance to Italian managers in the application of IFRS rules on goodwill impairment in a difficult economic period.

The selected timeframe is due to the fact that, in Italy, the first year of mandatory application of IAS/IFRS for separate financial statements of listed companies is 2006. Thus, in order to see the effects of such new valuation criteria, the authors decided to consider the first five- year period following IAS/IFRS implementation. Furthermore, having 2010 as the last year considered for an acquisition allowed them to provide a valuation of the acquisition performance as debated by the most of the managerial literature as recently very well documented by Risberg (2015). Indeed, managerial literature assesses that, in order to reach a substantial appraisal of a costly investment such as an acquisition, it would be best to consider a five-year period following the deal's closure.

At the same time, from a financial accounting perspective, a five-year period is considered adequate to monitor possible forms of EM related to impairment on goodwill.

Considering the importance of the topic from both the perspectives of managerial (with regard to M&As valuation processes) and financial accounting (with regard to intangibles valuation fulfilled by applying the impairment test instead of the amortization), this work aims to provide a multi-dimensional contribution to the current debate.

The paper is structured as follows. In the second section, the authors review the literature on EM with particular reference to goodwill impairment practices. In the third section, the authors develop their hypotheses. In the fourth section, they present the sample selection. The fifth section is dedicated to the research methodology and analysis of the results. The sixth section ends the paper, offering a few concluding remarks, and focussing on the limitations of the analysis while proposing some future research clues.

2. Literature review and theoretical framework

Despite more than a number of scientific contributions, there is no universally accepted definition of EM. This is probably related to the different forms of manipulation of information and accounting values that can be realized in the process of elaboration of financial reporting of a firm.

Due to its elusive concept, it is difficult to share a unique, good for all, definition. One of the most interesting contributions on a framework for EM research, is the work of Ronen and Yaari (2008), in which the various forms of EM can be traced to three main categories (black, grey, and white EM, in descending order of manipulation), based on the aims of the CEO. For each of these EM forms it is possible to identify the contribution of some representative scholars. Schipper (1989), Florio (2011), Dechow *et al.* (1995),

and Healy and Wahlen (1999) tried to define the concept of black EM; the main contributions in the grey EM are those of Arya *et al.* (1998), and Fields *et al.* (2001); about white EM the most relevant contribution is from Beneish (1999).

For the purpose of this study, the authors will follow Healy and Wahlen (1999) definition, which reinforce the notion that EM "occurs when managers use judgment in financial reporting and in structuring transactions to alert financial reports to either mislead some stakeholder about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers." According to their view, managers abuse their judgment in communicating the economic and financial situation of the company with the intention to deceive stakeholders about the real economic performance. In this case, of course, they act in a purely opportunistic way.

EM practices produce their effects on the whole financial statement, because every alteration causes has an impact on other items.

The literature highlights two kind of EM policies:

(1) real earnings management (REM); and

(2) disclosure earnings management (DEM).

Through the operations of REM, managers make choices potentially harmful to the interests of the same company in the medium to long term. There is indeed a tendency of the managers, to pay more attention on short-term results, because they are signal of a good management and because the related positive results can increase the estimate of stakeholders – primarily shareholders – with respect to managers themselves.

REM can directly modify annual income through actions that affect mainly the registration of costs and revenues or it can focus directly on financial statement.

Regarding the DEM, they allow directors to opportunistically use the discretion granted for the determination of accounting values subject to estimates and assumptions. These techniques do not distort the reality of the object of representation, but change its texture.

Accounting numbers included in financial reporting can be divided into objective and subjective. While the first cannot be distorted going forward in time, the latter contain estimated values and assumptions and therefore may be subject to change over time. The determination of these values is then based on measurement methods – quantitative and qualitative – that approximate their future value and can be used by managers for opportunistic purposes.

For these reasons, manager can implement policies of misreporting, affecting the quality of information contained in financial reports.

Is it possibile to distinguish four types of DEM practices:

(1) income smoothing;

(2) income maximization;

(3) income minimization; and

(4) big bath accounting.

Regarding income smoothing, Milgrom and Roberts (1992), state that high levels of performance in a given period may create expectations of an equivalent or even greater future growth, bending to the so called trail effect. To avoid a future penalty, therefore, is appropriate to maintain a low profile and send revenues to the future, filling the less fortunate years. Income smoothing policies, therefore, have the objective of

standardizing the growth maintaining levels slightly above the one obtained in the previous year. However, the stabilization of growth is not always easy to implement. In order not to give rise to particular "doubts" on the financial results, managers must make a detailed strategy that allows them to combine the performance of the firm with the micro and macro economic scenario, in order to "conserve energies for the climb and loosen the tension down". But this might seem strange since a too regular growth is not always seen in a positive way.

Turning to the second option (income maximization policies), it provides, as well as smoothing, the anticipation of the revenue and the deferral of costs, with the only goal to maximize the possible income for the current year. Being detrimental for the firm in the medium term, this technique makes sense only if there are strong incentives and only under certain conditions: the chance of breaking a debt coventant or, where appropriate, the expectations of shareholders or analysts; another case in which it might be appropriate is in case of extraordinary operations, most notably mergers.

Income minimization policies tend to resemble the smoothing one, but differs for the very short time dimension that characterizes it. The aim is indeed to minimize the profit for the year, in line with the expectations of analysts and investors, in order to reduce it if is too high compared to the target previously set (Beneish, 2001). In this way, it also allows the deferral of current income to a period of low profitability. However, some advantage may result from these operations, such as lower taxes due to lower operating income, on the one hand, and a lower cost of own shares.

Finally, the so-called big bath accounting policies are diametrically opposed to smoothing policies. Following the definition given by Healy (1985), "if earnings are so low that no matter which accounting procedures are selected target earnings will not be met, managers have incentives to further reduce current earnings by deferring revenues on accelerating write-off, a strategy known as "taking a bath". There is a tendency to worsen the current situation if it is not possible to reach the target set by analysts and/or investors. Given that expectations will not, in any event, be honored, managers will have an incentive to "sacrifice a year" to get a better position in the next ones. The reason behind this is that the market punishes with a meter less severe an additional loss in a situation already below expectations (Jordan and Clark, 2004).

One of the most important tools for EM is goodwill impairment. The accounting literature on goodwill write-off is very wide and it often analyzes matters not deeply related to their root cause (Li *et al.*, 2011; Hayn and Hughes, 2006; Francis *et al.*, 1996; Anantharaman, 2007; Beatty and Weber, 2006).

Some other authors (Gu and Lev, 2011) give instead an important contribution to the debate by tracing goodwill write-offs all the way back to their root cause ("the incentives of managers of overvalued firms to acquire businesses, whether to exploit the overpricing for shareholders' benefit or to justify and prolong the overpricing by maintaining the façade of growth") and by investigating the economic implications of goodwill impairment.

The potential correlation between goodwill impairment and EM practices is justified by the fact that, as demonstrated by the application of IAS 36, there is considerable scope for discretion. This is more visible in absence of reliable information and in the process of valuing assets that, by their nature, are by no means homogeneous, thus making it difficult any attempt at comparison.

In addition, other factors that increase the possibility of EM are: the strong information asymmetry between management on the one hand, and shareholders and stakeholders on the other; and the great discretion granted to managers, together with the fact that goodwill cannot be independently valued using fair value or value in use.

Because of its ability to produce effects – constant but variable over time – on accounting numbers, impairment test may result in significant volatility in the results.

For the above reasons, goodwill impairment is a candidate to be the main tool for managers to affect accounting year-end valuations.

Recalling what has been written before about EM techniques, for example managers could avoid goodwill write-offs for many years, increasing the value of assets allocated to the CGU in order to avoid impairments, and then report a substantial loss in a year marked by particularly good performances. In this case, we would be in the presence of an income minimization policy.

Conversely, managers could write-off goodwill in a context of bad performances, applying big bath policies.

These two kind of actions may be accompanied by other policies such as income maximization, oriented to the postponement of losses in the future to maximize the present performances, or income smoothing, with the purpose of charging the goodwill impairment on many accounting periods, maintaining a well-balanced performance over the years.

The strong heterogeneity of companies structure, giants in size and equipped with an ever wider range of intangible assets, has decreed the increasing difficulty in measuring a reliable value of the CGU elements, emerging from business combinations.

Considering that the increase in the size of the CGU augments the difficulty in identifying its asset, but its decrease becomes impossible to curb the effects of the expected benefits of goodwill, it is clear how this has significantly expanded the managers discretion.

IAS 36 has tried to be helpful in solving this problem, providing a lower and an upper limit in the configuration of the CGU, in relation to goodwill. But it is precisely here that managers can intervene. They, in fact, having to rely on reports and management plans generated by the internal control system, are called to express an opinion about the mechanism of aggregation of assets and about their attitude to generate cash inflows independently. There is a trade-off in size:

- too large CGU make it more difficult and imprecise assessing whether there were revaluations of assets that have diminished goodwill impairment loss, giving rise to a problem of allocative efficiency; and
- too fragmented and incomplete CGU in terms of the elements able to generate cash, reduce the ability to spread efficiently the synergies between CGUs and between the single assets included in them.

As well as the IASB admits, the process of identification of the CGU requires extensive use of discretion by managers. Whereas the identification of a CGU is the first step for impairment testing and the most important in terms of significance (as each other next step is based on it) we can deduce that from the beginning the management can act with greater freedom, in case they want to manipulate numbers for opportunistic purposes.

Although the IASB does not allow to change the assets included in a CGU from year to year, it allows changes in specific cases. So, as a result of reorganizations or acquisitions, the company may seek to change the composition of the CGU, to allow a more efficient allocation resulting from the added new resources. IAS 36 states that as a result of reorganization of the company structure and of the composition of the CGU, the goodwill that had been previously allocated to the latter, in turn, must be reallocated. This leads to a redefinition of earning capacity of the CGU and, therefore, is a great opportunity for managers to take action in order to achieve set targets in terms of reporting.

An EM practice would be to reallocate goodwill taken from a previous configuration that is likely to suffer an impairment loss, to CGUs including internally generated (not recorded) goodwill, using it to offset a potential goodwill impairment loss. In this way, the higher value attributed to some tangible or intangible assets or to the "original" internal goodwill within certain CGU, allows manager to compensate any possible impairment losses. One cannot, in fact, distinguish the goodwill paid by the purchaser at the time of the M&A operation from the internally generated goodwill after the transaction itself, or from the one present prior to the acquisition, on the part of the transferor.

Another crucial aspect is represented by the calculation of the recoverable amount of the CGU, as from the fair value side as well from the value in use one. According to the two configurations, we will have different effects. In the case of application of fair value less costs to sell, the discretionary increases going down the hierarchy of configuration of fair value. The options go from virtually no discretion, dictated by the level 1 (existence of contractual agreements or legally binding), to the near-total discretion of level 3 (estimates based on external information). In the case of application of value in use, the range of discretion for managers is of course bigger.

The goal to which managers tend to, affects the result of the impairment test and impact on the fair value and value in use, so that the managers can configure them in order to obtain a recoverable amount greater or less than the "fair" one.

Finally, the difficulties emerging from the impairment process pushes the standard setters to increase the disclosure on impairment testing, in order to try to reduce the information asymmetry and, conversely, to increase the level of transparency and reliability.

The main purpose of the disclosure on impairment is to inform stakeholders about the assumptions underlying its calculation which resulted in a write-off or not. In principle, it would therefore be considered a good thing that companies tend to bring a substantial amount of additional information to enable users of financial statements to understand the arguments and assumptions used in the test, allowing them to judge the managers decisions and their future implications. However, although managers reported more additional information, it is not said that this makes it reliable, and that they are synonymous with integrity. Conversely, in the absence of disclosure or in the presence of a lack of exposure, stakeholders would have serious problems in figuring out how to navigate, this giving rise to the idea that the opacity is caused by some manipulation.

3. Hypothesis development

The Italian legislation provides the possibility to amortize goodwill over a period of five to ten years (and therefore at an annual rate included between 10 and 20 percent). The requirement under IAS 36 to make an annual impairment testing of goodwill offers, instead, wide discretion to management; indeed, managers can choose to not perform any write-down, as well as, on the contrary, fully depreciate the asset in the subsequent year, given the difficulty to criticize their decision.

Basing their reasoning on these premises, the authors tested the following hypothesis:

H1. In the year of the deal's closure and in the following four years, the management detects impairment of goodwill in difformity with the previous Italian regulations and related accounting practices.

Such hypothesis may imply two different situations: *H1a* and *H1b* as it follows.

H1a. In the year of the deal's closure and in the following four years, the management detects an annual impairment of goodwill that is higher than 20 percent.

If hypothesis *H1a* is confirmed, this can entail the three following scenarios:

(1) the goodwill's original value generated by the M&A deal was excessive (the price was higher than the fair value of the acquired business) and the management, while being aware of that, had specific interests to account such higher value in order to proceed in the following years to detect an impairment;

(2) the goodwill's original value generated by the M&A deal was excessive (the price was higher than the fair value of the acquired business), but the management was not aware of it and

(3) the goodwill's original value generated by the M&A deal was appropriate (the price was equal to the fair value of the acquired business), but other events occurred subsequently impacting its value.

The first scenario represents an EM operation. The second scenario represents a case of mismanagement. The third scenario does not represent any case of manipulation or mismanagement. It is worth noticing that the greater the write-off the more likely is the first posited scenario.

H1b. In the year of the deal's closure and in the following four years, the management detects an annual impairment of goodwill that is lower than 10 percent.

If hypothesis *H1b* is confirmed, this can entail the two following scenarios:

(1) the goodwill's original value generated by the M&A deal was excessive (the price was higher than the fair value of the acquired business), and the management, while being aware of that, had specific interests in maintaining it high even in the following years without holding any impairment; and

(2) the goodwill's original value generated by the M&A deal was appropriate (the price was equal to the fair value of the acquired business).

The first scenario represents an EM operation. The second scenario does not represent any case of manipulation or mismanagement.

Consequently, if either *H1a* or *H1b* is confirmed, it is not possible to assess a case of EM with certainty. Indeed, given a management using an ethical behavior, evidence could only be added by a careful analysis implemented during the due diligence process and able to lead to a fair determination of the target's purchase price.

4. Sample selection

In the present work, the authors consider that an interesting context to verify the existence of EM policies – whether of income smoothing or big bath accounting or intermediate in nature between such these two extremes – is the one following M&A deals (as also stated by Gu and Lev, 2011).

In fact, especially within countries where the IAS/IFRS adoption is mandatory (e.g. Italy), M&As represent great opportunities for the acquiring firms' management to create intangible items (such as goodwill) to be used for EM policies in the following years.

Such firms are subject to the application of IAS 36 – they cannot amortize goodwill, but have to submit it to impairment test, which is much more discretionary. In fact, when determining the purchase price, management may be tempted to artificially manipulate such a value, hence proceeding to massive write-offs thereafter. Therefore, the M&A deal allows to observe managers' behavior and to verify the existence of EM practices.

The higher is the incidence of goodwill on total assets, the higher is the chance of influence on accounting results. For these reasons (and for those explained in the introduction), the selected sample included firms presenting all the following characteristics:

(1) they are listed in the Italian stock market;

(2) they have carried out (and accomplished), as acquirers, at least one M&A transaction in the first five years following the compulsory adoption of IAS/IFRS (2006/2010); and

(3) the incidence of goodwill on total assets is over 10 percent in at least one of the considered years.

Sample selection was made matching data from Aida and Zephyr databases.

The number of firms resulting from the matching is 18. However, one had to be excluded because of its delisting from the Italian stock market in 2009. This took to a final number of 17 firms included in the sample, as shown in Table I. These 17 firms concluded a total of 79 M&As in the considered timeframe.

5. Methodology of analysis and results

For each of the 17 firms under examination, the authors analyzed financial reports data for the year in which each acquisition took place and for the following four years. In fact, some of the firms of our sample concluded more than one acquisition in the considered timeframe, as shown in Table II. Table III shows the 79 M&As concluded by the 17 acquirers, forming the sample in the considered timeframe.

For each M&A, the authors highlighted the year (n) of the deal's closure, the emerging goodwill, and the impairments (in percent) accounted in the same year and in the following four years (n+1, n+2, n+3, n+4), allowing us to monitor the goodwill impairments of each deal in a five-years period.

From the analysis, the authors found that 11 out of 79 deals (concluded by seven out of 17 acquiring firms) produced positive goodwill. Hence, the remaining 68 deals were excluded from the analysis, and the aforementioned 11 cases were tested to verify *H1a* and *H1b*, this generating a total amount of 55 observations (11×5 years).

Results show that in 50 out of 55 observations, *H1* was confirmed (91 percent). More in detail, seven out of 55 confirmed *H1a* (13 percent) and 43 out of 55 confirmed *H1b* (78 percent). In the remaining five cases (9 percent), *H1* was not confirmed since in one case data were not available, and in the other four cases impairment was between 10 and 20 percent, perfectly in line with Italian regulations.

With regard to the 11 cases under observation, the authors noted that there is not any single case wherein the impairment is always comprehended between 10 and 20 percent, thus perfectly in line with Italian regulations. Therefore, they decided to examine whether for each of the seven acquiring firms it was possible to determine potential symptoms of typical DEM practices widely debated in the financial accounting literature (income smoothing, income minimization, income minimization, or big bath accounting).

Table I.
Sample selection method

Ragione sociale	Goodwill 2006 (0.000 €)	Total assets 2006 (0.000 €)	% Goodwill on Total assets 2006	Goodwill 2007 (0.000 €)	Total assets 2007 (0.000 €)	% Goodwill on Total assets 2007	Goodwill 2008 (0.000 €)	Total assets 2008 (0.000 €)	% Goodwill on Total assets 2008	Goodwill 2009 (0.000 €)	Total assets 2009 (0.000 €)	% Goodwill on Total assets 2009	Goodwill 2010 (0.000 €)	Total assets 2010 (0.000 €)	% Goodwill on Total assets 2010	Main stock market
FIRM 1	149,829	472,836	31.7	149,829	503,739	29.7	149,829	516,819	29.0	149,829	552,239	27.1	149,829	572,500	26.2	Italian Stock Market
FIRM 2	0	8,833	0.0	0	10,184	0.0	0	17,397	0.0	0	20,114	0.0	5,752	21,628	26.6	Italian Stock Market
FIRM 3	320,780	1,297,379	24.7	420,597	1,377,122	30.5	421,624	1,318,235	32.0	421,624	1,606,262	26.2	427,624	1,731,785	24.7	Italian Stock Market
FIRM 4	24,083	159,866	15.1	27,591	181,313	15.2	27,591	224,198	12.3	27,591	264,675	10.4	31,851	334,091	9.5	Italian Stock Market
FIRM 5	24,299	68,514	35.5	24,899	104,393	23.9	24,899	111,167	22.4	26,215	121,894	21.5	26,215	134,649	19.5	Italian Stock Market
FIRM 6	29,841	285,373	10.5	29,841	257,952	11.6	29,841	253,150	11.8	29,841	252,676	11.8	29,841	249,702	12.0	Italian Stock Market
FIRM 7	0	71,535	0.0	30,551	186,303	16.4	19,205	176,297	10.9	8,244	156,487	5.3	4,933	137,638	3.6	Italian Stock Market
FIRM 8	32,506	235,266	13.8	32,506	288,243	11.3	32,506	276,929	11.7	32,506	356,792	9.1	32,506	390,212	8.3	Italian Stock Market
FIRM 9	67,014	513,960	13.0	70,374	586,237	12.0	70,374	611,586	11.5	70,965	648,439	10.9	70,965	698,507	10.2	Italian Stock Market
FIRM 10	414,394	2,529,385	16.4	414,394	3,143,453	13.2	364,094	3,249,676	11.2	361,994	3,252,236	11.1	183,994	3,193,089	5.8	Italian Stock Market
FIRM 11	339,607	1,313,264	25.9	342,837	1,254,155	27.3	345,296	1,257,456	27.5	368,551	1,406,251	26.2	368,551	1,303,936	28.3	Italian Stock Market
FIRM 12	12,621	44,058	28.6	15,769	74,989	21.0	15,769	83,237	18.9	17,804	104,750	17.0	23,366	135,472	17.2	Italian Stock Market
FIRM 13	225,110	847,467	26.6	225,110	825,020	27.3	230,184	814,456	28.3	230,069	844,840	27.2	231,088	789,903	29.3	Italian Stock Market
FIRM 14	70,653	158,324	44.6	61444	144,840	42.4	62,378	133,527	46.7	50,346	118,925	42.3	50,347	110,575	45.5	Italian Stock Market
FIRM 15	207,988	670,033	31.0	207,988	693,433	30.0	205,088	658,280	31.2	205,088	642,759	31.9	108,837	533,164	20.4	Italian Stock Market
FIRM 16	40,013,045	84,446,580	47.4	40,013,045	82,556,449	48.5	40,013,045	80,555,240	49.7	40,013,045	82,631,614	48.4	40,013,045	78,626,195	50.9	Italian Stock Market
FIRM 17	56	5,479	1.0	5,152	17,510	29.4	0	26,302	0.0	0	54,121	0.0	0	188,825	0.0	Italian Stock Market

Firm	M&A deals 2006	2007	2008	2009	2010	Total	Years with goodwill > 10% 2006	2007	2008	2009	2010
FIRM 1					1	1					
FIRM 2				1	2	3					
FIRM 3	1		3	3	2	9					
FIRM 4			1		1	2					
FIRM 5	1	4	1	1	1	8					
FIRM 6	2	1	5		1	9					
FIRM 7		2		2		4					
FIRM 8			1	4		5					
FIRM 9	1	2	1			4					
FIRM 10		2				2					
FIRM 11		1	1			2					
FIRM 12			1	1		2					
FIRM 13	1		1			2					
FIRM 14	2	1		3		6					
FIRM 15	1	1	1		1	4					
FIRM 16	2	4	1	1	1	9					
FIRM 17				5	2	7					
Total number of deals per year	11	18	17	21	12						
Total number of deals 2006/2010			79								

Table II.
Number of deals implemented by acquirers in the selected timeframe

For this reason, the authors made a yearly comparison between impairment and income, deal by deal, in order to examine the overall financial situation of each of the seven acquirers (see Table IV).

In order to determine the adoption of income smoothing practices, the authors considered that a typical symptom highlighted in the literature is income's standard deviation with regard to its mean. Thus, they looked for cases wherein, in the observed timeframe, such standard deviation was not higher than the 25 percent of the income's mean for the same period. In fact, at general level, the lower the gap measured by standard deviation, the higher income smoothing. In view of data, results show that, considering 25 percent a reasonable threshold, there is only a single case of income smoothing (firm 9), as shown in Table V. It is worth noticing that income smoothing policies represent a firm's accounting strategy. Thus, it is necessary to consider as longer as possible monitoring timeframe in order to verify its implementation. In this case, since the first year had to be 2006, the authors examined all the following years for whom financial reports were available (2006-2013).

In order to determine the adoption of income minimization practices, the prevailing financial accounting literature indicates that the main conditions to be respected are:

(1) the acquiring firm does not implement any income smoothing practice;

(2) there must have been an income in at least one of the observed years;

(3) along the examined timeframe, there must be at least a year with and a year without impairment; and

(4) the firm did not detect any impairment during those years in which there was a loss.

All these conditions must be respected at the same time. For such analysis, the authors observed the year of the deal's closure and the following four years. In view of the

Table III.
Analysis of goodwill impairments

	Deal 1	Deal 2	Deal 3	Deal 4	Deal 5	Deal 6	Deal 7	Deal 8	Deal 9
FIRM 1									
Year	2010								
Target firm	Target 1.1								
Goodwill generated by the M&A operation	0								
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00								
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00								
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00								
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00								
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00								
FIRM 2									
Year	2009	2010	2010						
Target firm	Target 2.1	Target 2.2	Target 2.3						
Goodwill generated by the M&A operation	0	0	0						
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00						
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00						
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00						
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00						
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00						
FIRM 3									
Year	2006	2008	2008	2008	2009	2009	2009	2010	2010
Target firm	Target 3.1	Target 3.2	Target 3.3	Target 3.4	Target 3.5	Target 3.6	Target 3.7	Target 3.8	Target 3.9

(*continued*)

Table III.

	Deal 1	Deal 2	Deal 3	Deal 4	Deal 5	Deal 6	Deal 7	Deal 8	Deal 9
Goodwill generated by the M&A operation	0	0	0	0	0	0	0	0	0
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIRM 4									
Year	2008	2010							
Target firm	Target 4.1	Target 4.2							
Goodwill generated by the M&A operation	0	4,260							
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	nd							
FIRM 5									
Year	2006	2007	2007	2007	2007	2008	2009	2010	
Target firm	Target 5.1	Target 5.2	Target 5.3	Target 5.4	Target 5.5	Target 5.6	Target 5.7	Target 5.8	
Goodwill generated by the M&A operation	461	0	0	0	0	0	1,316	0	

(*continued*)

	Deal 1	Deal 2	Deal 3	Deal 4	Deal 5	Deal 6	Deal 7	Deal 8	Deal 9
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FIRM 6									
Year	2006	2006	2007	2008	2008	2008	2008	2008	2010
Target firm	Target 6.1	Target 6.2	Target 6.3	Target 6.4	Target 6.5	Target 6.6	Target 6.7	Target 6.8	Target 6.9
Goodwill generated by the M&A operation	0	0	0	0	0	0	0	0	0
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIRM 7									
Year	2007	2007	2009	2009					
Target firm	Target 7.1	Target 7.2	Target 7.3	Target 7.4					
Goodwill generated by the M&A operation	30,551	0	0	0					
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00	0.00					

(*continued*)

Table III.

Table III.

	Deal 1	Deal 2	Deal 3	Deal 4	Deal 5	Deal 6	Deal 7	Deal 8	Deal 9
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	37.14	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	35.88	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	10.69	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	16.29	0.00	0.00	0.00					
FIRM 8									
Year	2008	2009	2009	2009	2009				
Target firm	Target 8.1	Target 8.2	Target 8.3	Target 8.4	Target 8.5				
Goodwill generated by the M&A operation	0	0	0	0	0				
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00	0.00	0.00				
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00	0.00	0.00				
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00	0.00	0.00				
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00	0.00	0.00				
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00	0.00	0.00				
FIRM 9									
Year	2006	2007	2007	2008					
Target firm	Target 9.1	Target 9.2	Target 9.3	Target 9.4					
Goodwill generated by the M&A operation	0	3,360	0	0					
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00	0.00					

(*continued*)

	Deal 1	Deal 2	Deal 3	Deal 4	Deal 5	Deal 6	Deal 7	Deal 8	Deal 9
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00	0.00					
FIRM 10									
Year	2007	2007							
Target firm	Target 10.1	Target 10.2							
Goodwill generated by the M&A operation	0	0							
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00							
FIRM 11									
Year	2007	2008							
Target firm	Target 11.0	Target 11.1							
Goodwill generated by the M&A operation	0	2,459							
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00							

(*continued*)

Table III.

Table III.

	Deal 1	Deal 2	Deal 3	Deal 4	Deal 5	Deal 6	Deal 7	Deal 8	Deal 9
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00							
FIRM 12									
Year	2008	2009							
Target firm	Target 12.1	Target 12.2							
Goodwill generated by the M&A operation	0	0							
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00							
FIRM 13									
Year	2006	2008							
Target firm	Target 13.1	Target 13.2							
Goodwill generated by the M&A operation	0	0							
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00							
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00							

(*continued*)

Table III.

	Deal 1	Deal 2	Deal 3	Deal 4	Deal 5	Deal 6	Deal 7	Deal 8	Deal 9
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00							
FIRM 14									
Year	2006	2007	2008	2009	2009	2009			
Target firm	Target 14.1	Target 14.2	Target 14.3	Target 14.4	Target 14.5	Target 14.6			
Goodwill generated by the M&A operation	70,230	9,765	3,032	0	0	7,853			
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	69.23	0.00	0.00	0.00			
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	27.01	0.00	0.00	0.00	0.00	0.00			
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	19.58	0.00	0.00	0.00	68.85			
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	14.41	0.00	30.77	0.00	0.00	0.00			
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00	0.00	0.00	na			
FIRM 15									
Year	2006	2007	2008	2010					
Target firm	Target 15.1	Target 15.2	Target 15.3	Target 15.4					
Goodwill generated by the M&A operation	207,988	0	0	0					
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00	0.00					
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	46.28	0.00	0.00	0.00					

(*continued*)

Table III.

	Deal 1	Deal 2	Deal 3	Deal 4	Deal 5	Deal 6	Deal 7	Deal 8	Deal 9
FIRM 16									
Year	2006	2006	2007	2007	2007	2007	2008	2009	2010
Target firm	Target 16.1	Target 16.2	Target 16.3	Target 16.4	Target 16.5	Target 16.6	Target 16.7	Target 16.8	Target 16.9
Goodwill generated by the M&A operation	0	0	0	0	0	0	0	0	0
Goodwill impairment generated by the M&A deal - year n (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIRM 17									
Year	2009	2009	2009	2009	2009	2010	2010		
Target firm	Target 17.1	Target 17.2	Target 17.3	Target 17.4	Target 17.5	Target 17.6	Target 17.7		
Goodwill generated by the M&A operation	0	0	0	0	0	0	0		
Goodwill impairment generated by the M&A deal – year *n* (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Goodwill impairment generated by the M&A deal – year *n*+1 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Goodwill impairment generated by the M&A deal – year *n*+2 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Goodwill impairment generated by the M&A deal – year *n*+3 (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Goodwill impairment generated by the M&A deal – year *n*+4 (%)	0.00	0.00	0.00	0.00%	0.00	0.00	0.00		

Table IV.
A yearly comparison between impairment and income, deal by deal

	Year of M&A deal	Goodwill generated by the deal	Total impairment in five years	2006		2007		2008		2009		2010		2011		2012		2013	
				Impairment	Income	Impairment	Income	Impairment	Income	Impairment	Income	Impairment	Income	Impairment	Income	Impairment	Income	Impairment	Income
FIRM 4																			
Target 4.2	2010	4,260	0	0	8,637	0	10,037	0	25,737	0	41,840	0	69,929	0	95,759	0	92,382	0	81,836
FIRM 5																			
Target 5.1	2006	461	0	0	1,099	0	2,078	0	4,713	0	4,547	0	5,308	nv	3,215	nv	2,604	nv	4,977
Target 5.7	2009	1,316	0	0		0		0		0		0		0		0		0	
FIRM 7																			
Target 7.1	2007	30,551	30,551	0	−2,940	0	−10,828	11,346	−58,814	10,961	−48,358	3,267	−22,782	4,977	−28,083	nv	−52,581	nv	−1,781
FIRM 9																			
Target 9.2	2007	3,360	0	0	25,217	0	27,950	0	30,296	0	38,544	0	45,109	0	47,594	nv	48,765	nv	46,771
FIRM 11																			
Target 11.2	2008	2,459	0	0	71,006	0	64,470	0	29,984	0	46,053	0	18,848	0	47,029	0	46,190	nv	−1,649
FIRM 14																			
Target 14.1	2006	70,230	29,090	0	−17,208	18,972	4,840	0	5,761	10,118	−26,952	0	1,890	nv	−44,410	nv	−9,343	nv	−1,202
Target 14.2	2007	9,765	1,912	0		0		0		1,912		0		0		nv		nv	
Target 14.3	2008	3,032	3,032	0		0		2,099		0		0		933		0		nv	
Target 14.6	2009	7,853	5,407	0		0		0		0		0		5,407		0		0	
FIRM 15																			
Target 15.1	2006	207,988	96,251	0	−92,052	0	−79,445	0	−80,372	0	−64,787	96,251	−153,209	nv	−60,759	nv	−178,110	nv	−150,503

above conditions, Table VI shows that none of the seven acquiring firms used goodwill impairment generated by the considered deals to implement income minimization practices in the selected timeframe.

In order to determine the adoption of income maximization practices, the prevailing financial accounting literature indicates that the main conditions to be respected are:

(1) the acquiring firm does not implement any income smoothing nor income minimization practices; and

(2) the firm did not detect any impairment during the selected timeframe.

Both conditions must be respected at the same time. For such analysis, the authors observed the year of the deal's closure and the following four years. In view of the above conditions, Table VII shows that three of the seven acquiring firms used

Table V.
Income smoothing analysis

	Income										
	2006	2007	2008	2009	2010	2011	2012	2013	Media	SD	Test result
FIRM 4	8,637	10,037	25,737	41,840	69,929	95,759	92,382	81,836	53,269.63	36,210.71	no
FIRM 5	1,099	2,078	4,713	4,547	5,308	3,215	2,604	4,977	3,567.63	1,542.37	no
FIRM 7	−2,940	−10,828	−58,814	−48,358	−22,782	−28,083	−52,581	−1,781	−28,270.88	22,694.05	no
FIRM 9	25,217	27,950	30,296	38,544	45,109	47,594	48,765	46,771	38,780.75	9,670.11	yes
FIRM 11	27,950	64,470	29,984	46,053	18,848	47,029	46,190	−1,649	34,859.38	20,491.47	no
FIRM 14	−17,208	4,840	5,761	−26,952	1,890	−44,410	−9,343	−1,202	−10,828.00	17,751.19	no
FIRM 15	−92,052	−79,445	−80,372	−64,787	−153,209	−60,759	−178,110	−150,503	−107,404.63	45,818.03	no

Table VI.
Income minimization analysis

FIRM 4	Yes	No
	Yes	
	No	
	–	
FIRM 5	Yes	No
	Yes	
	No	
	–	
FIRM 7	Yes	No
	Yes	
	Yes	
	No	
FIRM 9	No	No
	–	
	–	
	–	
FIRM 11	Yes	No
	Yes	
	No	
	–	
FIRM 14	Yes	No
	Yes	
	Yes	
	No	
FIRM 15	Yes	No
	No	
	–	
	–	

FIRM 4	Yes Yes	Yes
FIRM 5	Yes Yes	Yes
FIRM 7	Yes No	No
FIRM 9	No –	No
FIRM 11	Yes Yes	Yes
FIRM 14	Yes No	No
FIRM 15	Yes No	No

Table VII.
Income maximization analysis

goodwill impairment generated by the considered deals to implement income maximization practices in the selected timeframe.

With regard to big bath accounting, it is important to preliminarily specify that such an analysis needs to be done year-by-year. This is due to the fact that big baths represent an opportunity that may be caught when, at the end of a specific year, the firm incurs huge losses, thus deciding to take advantage by adding a further loss through impairment. This implies that big bath accounting does not constitute an accounting strategy itself and, therefore, has to be analyzed yearly. In order to determine the adoption of big bath accounting practices, the prevailing financial accounting literature indicates that the main conditions to be respected are:

(1) in the year *n*, the acquiring firm must have detected a goodwill impairment;

(2) in the year *n*, there must have been a loss;

(3) in the year *n*, there would be still a loss independently by the impact of the impairment; and

(4) in the year $n-1$, the acquiring firm has generated: an income, or a contained loss.

With regard to point d), the authors define as "contained loss" a loss that is not higher than 20 percent of the one registered in the year *n*. All these conditions must be respected at the same time. For such analysis, the authors observed – year-by-year – the time of the deal's closure and the following four periods. The years not included in the considered timeframe have been qualified as not considered (nc). In view of the above conditions, Table VIII shows that two of the seven acquiring firms (firm 7 and firm 14) used goodwill impairment generated by the considered deals to implement big baths. In particular, firm 7 did it in 2008, and firm 14 did it in 2009 and 2011.

6. Concluding remarks

The first limitation of this study relates to the sample. The total number of firms selected through Zephyr and Aida (17) is low because the method we employed for the analysis forced the authors to exclude all the non-publicly listed companies (because only the listed ones are to be IFRS-compliant). Moreover, they decided to consider only those firms whose goodwill is a relevant item (at least 10 percent of total assets), as explained in the introduction.

Table VIII.
Big bath accounting analysis

	2006		2007		2008		2009		2010		2011		2012		2013	
FIRM 4	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	–		–		–		–		–		–		–		–	
	–		–		–		–		–		–		–		–	
	–		–		–		–		–		–		–		–	
FIRM 5	No	No	No	No	No	No	No	No	No	No	nc					
	–		–		–		–		–							
	–		–		–		–		–							
	–		–		–		–		–							
FIRM 7	No	No	No	No	Yes	Yes	Yes	No	Yes	No	Yes	No	nc			
	–		–		Yes		Yes		Yes		Yes					
	–		–		Yes		Yes		Yes		Yes					
	–		–		Yes		No		No		No					
FIRM 9	No	No	No	No	No	No	No	No	No	No	No	No	nc			
	–		–		–		–		–		–					
	–		–		–		–		–		–					
FIRM 11	No	No	No	No	No	No	No	No	No	No	No	No	No	No	nc	
	–		–		–		–		–		–		–			
	–		–		–		–		–		–		–			
FIRM 14	No	No	Yes	No	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No
	–		No		No		Yes		–		Yes		–		–	
	–		–		–		Yes		–		Yes		–		–	
	–		–		–		Yes		–		Yes		–		–	
FIRM 15	No	No	No	No	No	No	No	No	Yes	No	nc					
	–		–		–		–		Yes							
	–		–		–		–		Yes							
	–		–		–		–		No							

Furthermore, they focussed only on firms listed on the Italian stock market for the effects that financial crisis had on accounting practices, and specifically on goodwill impairments, as previously motivated. In this regard, further studies might widen the authors' knowledge of financial accounting practices adopted in different countries which, as much as Italy, have been severely hit by the current crisis. Such expanded knowledge would allow them to implement comparative analyses between countries with different accounting traditions (i.e. Continental vs Anglosaxon ones) or with similar traditions but impacted differently.

Another limitation of this study, well stressed by the results, is that it is almost impossible to provide unquestionable evidence of EM practices.

Typical methodologies used to identify EM practices could be the Beneish model or the accruals method that, despite constant changes and improvements, fail to provide consistent and comparable results. To this aim, the authors agree with Gu and Lev (2011) who attribute major relevance to the Shleifer-Vishny model's capability to figure out manipulations based on goodwill impairment after M&A deals, basing its analysis on investors' misvaluations of the merging partners.

Overall, this kind of analysis can only determine a managerial attitude resembling EM practices, which emerges from clues that could become proofs only if scholars had full access to the original documents handled during the due diligence process.

In conclusion, it is important to go back to the authors' research questions:

RQ1. Are goodwill impairments used by listed firms' managers to manipulate earnings?

This study – in line with the most relevant scholar contributions – shows that understanding whether a company's financial reports are vitiated by opportunistic manipulations of managers can be difficult, due to the complex estimation of the predictor variables on which many valuations are based. The methods available to the authorities and stakeholders are limited to models unsafe and difficult to apply.

The authors' analysis does not prove evidence of certain EM practices, but it highlights very clearly that, after the adoption of IAS/IFRS, managers' behavior has deeply changed. The chance to decide if and to what extent to impair goodwill was widely used by managers, who decided to leave Italian amortization rules (10-20 percent per year) in favor of higher or lower write-offs.

As the majority of firms included in the sample do not impair goodwill at all, the authors may agree with Greco *et al.* (2015), which provide arguments in support of the re-introduction of mandatory goodwill amortization:

RQ2. If so, what kind of EM practice is mostly used?

The narrow selected sample does not allow a generalization; but this study shows that there is no univocal choice. The authors found income smoothing cases, as well as income maximization and big baths, almost equally distributed. It shows that every firm pursues its own "strategy", and even those who seem not having one can be seduced by the chance of a big bath under the "right" conditions.

All in all, this study reveals that managerial behaviors *vis-à-vis* goodwill impairment in the Italian M&A context from 2006 to 2013 are very likely amenable to EM practices leveraging on the discretionality offered by IAS 36 and, more in general, the IAS/IFRS accounting standards system. These complex but insightful evidences lead us to a big, but still unsolved question: is it still appropriate to rely on financial reports as the main document of corporate communication to stakeholders?

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