

# Self-Financing Attitude, Earnings Management and Goodwill Accounting. Evidence from Italian Listed Companies \*

*In this paper, we investigate the effects of goodwill accounting under IAS 36 on the self-financing attitude of Italian listed companies. The technical areas of discretion in impairment test accounting enable pursuing three typical forms of earnings management: earnings smoothing, earnings increasing and earnings decreasing. The five phases of the impairment test – identifying cash generating units, allocating goodwill to each CGU, determining the carrying amount, estimating fair value less cost to sell and measuring the value in use - could conceal possible earnings manipulations. We develop and test some hypotheses that allow us to demonstrate the existence of earnings management practices in relation to the goodwill impairment test. The evidence suggests that the economic and equity effects of goodwill accounting under IAS 36 can be observed - as we demonstrate - in a reduced self-financing attitude and in the distribution of dividends determined on earnings that are "inflated" by the failure to write-down goodwill.*

TIZIANO ONESTI (University of Rome III)

MAURO ROMANO (University of Foggia)

## 1. Introduction

The Italian accounting literature has always sustained with conviction that strengthening financial conditions and the consequent preservation of future earnings capacity are preconditions to ensuring business continuity and to guaranteeing the effective protection of stakeholder interests. The application of international accounting standards and the widespread use of quantitative determinations based on fair value has given rise - particularly in connection with the severe crisis of financial markets - to some significant issues in the accounting standard framework, with consequences on the measurement and representation of corporate earnings and decisions related thereto (determining cash flows, dividend distribution, the effectiveness of corporate equity). Amongst the innovations introduced by IAS/IFRS, particular mention must be made of the accounting treatment of goodwill and the impact on earnings quality, on the dynamics of corporate financial lines and, specifically, on self-financing capacity.

This paper aims to demonstrate that the transition from the goodwill accounting treatment based on systematic amortisation to that of impairment testing has greatly reduced corporate self-financing capacity, also due to the political pressure on earnings management, with the effect of distributing unrealized profits and the general impoverishment of the financial condition of Italian companies.

Corporate self-financing is the process whereby business investments are financed without recourse - or to a lesser extent - to loan capital or equity contributions from shareholders. In other words, self-financing ensures that the financial needs ensuing from corporate investments are covered with cash generated from operations.

In this perspective, the amortisation of tangible and intangible assets plays a key role. Indeed, amortisation, in addition to allocating asset acquisition costs according to their useful life, allows retaining profits with a clear contributory effect on self-financing capacity.

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Corporate self-financing capacity must be analyzed in relation to a predetermined period of time (one year, six months, etc.) and two distinct methods enable determining this capacity: the global method and the analytical method.

According to the global method, self-financing capacity can be measured as:

$$\text{Self-financing capacity} = \Delta \text{Inv.} - \Delta \text{Debt} - \Delta \text{Equity}$$

where:

*Self-financing capacity* is the annual cash flow generated by operations and not distributed in form of dividends;

$\Delta \text{Inv.}$  is the annual capital expenditure;

$\Delta \text{Debt}$  indicates the change in accounts payable;

$\Delta \text{Equity}$  is the change in share capital.

According to the analytical method, self-financing capacity can be measured as:

$$\text{Self-financing capacity} = \Delta \text{Equity reserves} + \Delta \text{Earnings} + \Delta \text{AV}$$

where:

*Self-financing capacity* is the annual cash flow generated by operations and not distributed in form of dividends;

$\Delta \text{Equity reserves}$  is the change in equity reserves;

$\Delta \text{Earnings}$  indicates the change in net incomes;

$\Delta \text{AV}$  is the change in the asset valuation reserves.

In the following section, we explore the links between the methodological and valuation choices of impairment testing and the management discretion issues that render the goodwill accounting treatment particularly opportune to pursuing earnings management objectives.

## **2. Managerial Discretion, Earnings Management and Goodwill Impairment Accounting**

With the coming into force of EC Regulation 1606/2002 and Legislative Decree no. 38/2005, many Italian companies have adopted the IAS/IFRS international accounting standards in preparing their annual and consolidated accounts.

IAS 36 - Impairment of Assets - is among accounting standards that have had the greatest impact on the representation and measurement of periodic financial results and related equity value. In fact, this standard has introduced the replacement of systematic amortisation of intangible assets with an indefinite useful life and goodwill generated from business combinations with a precise and periodic verification of the economic solidity of goodwill entered in the accounts (the so-called impairment test).

It is widely known that one of the most critical aspects of goodwill accounting is the fact that acquired goodwill is subject to amortisation.

On this point, let us compare the key goodwill accounting practices, which can be classified as follows (other possible approaches are proposed in international literature by Seetharaman *et al.*, 2004 and Ding *et al.*, 2008):

- a) *Write-off policies ("weakened static" phase of goodwill accounting)*
- b) *Capitalisation policies*
- b.1) *Capitalisation and amortisation ("dynamic" phase)*
- b.2) *Capitalisation and impairment check ("actuarial" phase)*

With regard to the impairment test method as introduced by IAS 36, this foresees the following fundamental phases.

- 1) Identification of "cash generating units" or "CGUs" to which goodwill acquired in business combinations must be allocated (IAS 36, § 80)
- 2) Allocation of goodwill to each cash generating unit (or group of CGUs) that is expected to benefit from the synergies of the combination, irrespective of whether other assets or liabilities of the acquired company are assigned to such units (or groups of units) (IAS 36, § 80)
- 3) Determination of the carrying amount of each CGU as the sum of allocated goodwill and the carrying amounts of all other tangible and intangible assets that can be attributed to the unit, either directly or according to reasonable and uniform criteria (IAS 36, § 76)
- 4) Estimation of the "recoverable amount" of individual CGUs, namely, the higher of a CGU's fair value less costs to sell and its value in use (IAS 36, § 18)
- 5) Determination of any loss suffered by the CGU as the difference between the greatest amount recoverable of each CGU and its corresponding (lower) carrying amount (IAS 36, § 59) and attribution of the impairment loss of the CGU to goodwill and, possibly, to other assets comprising the unit according to the hierarchy established by IAS 36

Each of these fundamental phases of the goodwill impairment test requires formulating evaluation hypotheses and assumptions to which the outcome of the test may be particularly sensitive. This results in, as emphasised by national and international literature, significantly expanding the area of discretion of those preparing the accounts. Although the IAS 36 accounting principle foresees numerous rules on, for example, identifying the CGUs to which goodwill should be allocated or the procedure to determine the recoverable amount, there is still ample room for discretion and uncertainty requiring management to formulate individual and subjective judgements.

These judgements can lead to opportunistic behaviour aimed at information objectives that do not reflect the true and fair view of the firm and are intended to represent economic-financial performance that differs from that actually achieved (Comiskey-Mulford, 2010).

In international literature, the term earnings management generally indicates the use of discretion of those preparing the accounts in pursuing objectives of a personal or specific nature to obtain an advantage or to mislead certain stakeholders on operations and corporate results attained (Dechow *et al.*, 1995; Burgsthaler-Dichev, 1997; Dechow-Dichev, 2002).

In other words, earnings management implies accounting policies that, outside of the scope of the quantitative determination of accounts, are aimed at the methodical alteration of periodic corporate reporting.

The technical areas of discretion in goodwill impairment testing in essence lend themselves to pursuing three typical forms of earnings management: in using the test results, management could manipulate corporate results over time, favouring their stabilization (earnings smoothing) and thus avoiding, for example, the emergence of impairment losses in the worst periods and charging these to more favourable periods; they could conceal, even for prolonged periods of time, the impairment losses of the CGU to which goodwill is allocated and present results that are distorted by the failure to write down goodwill (earnings increasing); by means of an excessively strict application of impairment testing rules, management could present the impairment losses of the CGU in the first year of appointment and essentially blame the outgoing management for the failure to recognize the same, thus ensuring that the results are unaffected in the future (or less affected, in the case of partial write-downs) by possible goodwill impairment losses or other intangibles.

These possible manipulations of results could be concealed in the five aforementioned phases of the impairment test (Van Tendeloo-Vanstraelen, 2005; Ball, 2006; Bini-Della Bella, 2007; Carlin-Finch, 2010; Quagli-D'Alauro, 2010; Bini, 2011).

Our study objective is to test the impact of applying IAS 36 to the consolidated financial statements of Italian companies listed on the FTSE MIB segment in the period 2005 - 2010 in relation to earnings management and dividend policies.

### 3. Literature Review

It is commonly known that the possibility of implementing various forms of earnings management largely depends on the degree of freedom that accounting rules grant management in accounting estimates. In this sense, accounting standards must ensure an adequate compromise between rigidity and flexibility: on one hand, the adoption of excessively rigid accounting rules, whilst reducing management discretion, could lead to applications that are not particularly flexible and poorly adaptable to the variety of possible cases. On the other hand, excessive flexibility, "loosening the mesh" of accounting options and possible treatments, involves greater subjectivity in accounting estimates (Healy-Wahlen, 1999).

In addition to the accounting rules of reference, other variables could induce earnings management behaviour. These are context variables, such as the degree of investor and minority interest protection, the quality of national business legislation, the characteristics of the labour market, the control mechanisms and sanctions foreseen in the preparation and publication of accounts, the degree of development of financial markets (Leuz *et al.*, 2003), specific market phases (Beuselinck *et al.*, 2007) or firm-specific variables, such as the quality of corporate governance mechanisms (Paananen, 2008; Verriest-Gaeremynck, 2009), management access to incentives (a number of studies concern decisions on the amortisation period and other goodwill write-off decisions, see Henning-Shaw, 2003; Francis *et al.*, 1996; Henning *et al.*, 2004), ownership structures (Healy, 1985), level of debt (Vanza *et al.*, 2009) and top management background (Brochet-Welch, 2011).

The introduction of IAS/IFRS international accounting standards has given rise to a series of considerations on the quality of corporate results (above all, see recent works by Barth *et al.*, 2008; Christensen *et al.*, 2008; Chen *et al.*, 2010 and Viganò, 2009). Widespread recourse to fair value has evidenced - especially at a time when the estimation capacity of the market has shown significant limitations - ample room for manoeuvre, the growing subjectivity of accounting estimates and the unfortunate consequences in terms of the stability and reliability of results (in particular, see Penman, 2007). Studies carried out on this subject on a world-wide level clearly demonstrate that despite high quality accounting standards, the urge to manipulate results is still vigorous in the presence of managerial incentives, also in relation to the accounting standards implementation method (in this regard, Daske *et al.* (2008) distinguish between serious adopters and non-serious adopters).

IAS 36 should certainly be included amongst the accounting standards that are most susceptible to tampering with particular reference to goodwill impairment test accounting.

Several accounting studies have investigated the problem of managerial discretion in relation to goodwill impairment testing with the primary objective of verifying whether those preparing the accounts have opportunistically used the degree of discretion inherent in IAS 36.

Many of the studies that will be mentioned refer to the American accounting standard SFAS 142 on goodwill impairment testing adopted by U.S. companies since 2001. This accounting standard is, in many respects, similar to IAS 36.

However, even before the introduction of SFAS 142, during the coexistence of systematic amortisation and write-downs for impairment of goodwill, Zucca and Campbell (1992) conducted empirical research to verify the relationship between earnings management and goodwill impairment testing. The authors began from the assumption that "there is no pattern in the path of expected earnings" and indicate the path as "random". They highlight the fact that, in most cases, write-down of goodwill is justified by lower than expected earnings ("bathers") while

in other cases, write-down of goodwill is recorded in the presence of higher than expected earnings (“income smoothers”).

Subsequent to the introduction of SFAS 142, research conducted by Holthausen and Watts (2001) and Watts (2003) shows that when fair value estimates are not based on actively traded market prices and thus unverifiable, opportunistic management behaviour increases.

Beatty and Weber (2006) studied the motivations underlying the postponement of recognition of impairment losses to subsequent years and found a tendency to recognize goodwill impairment losses in the presence of executive compensation systems based on earnings results or the extended periods in office of directors.

Ramanna (2008), in the wake of the conclusions previously reached by Holthausen and Watts (*ibidem*) on managerial opportunism in the presence of unverifiable accounting decisions, i.e., largely discretionary, explored these hypotheses with reference to goodwill impairment testing, demonstrating that the use of unverifiable fair value estimates of goodwill is open to arbitrary and opportunistic management behaviour.

Li and Sloan (2011) carried out an empirical study on companies listed in the NYSE, AMEX and NASDAQ segments covering the period 2003-2009 and identified that, by exploiting the inherent technical discretion in SFAS 142, there is a certain frequency of cases where the management defers recognition of goodwill impairment losses to future years with deleterious effects on the accounting results presented and on the market price of shares.

Ramanna and Watts (2011) in a more recent study, following a review of the reasons that induce management “to manage goodwill impairment loss”, distinguish between reasons related to management holding “private information” on future cash flow estimates and those attributed to agency theory (of a contractual, reputational and financial nature), providing important empirical evidence on the practice of earnings management policies related to certain impairment indicators considered.

More specifically, Ramanna and Watts (*ibidem*) conclude that, in certain companies with market indications of goodwill impairment, the frequency of omitted impairment is as high as 69%. Based on these findings, the reasons that goodwill impairment is not recognised are mainly attributable to management forecasts of expected cash flows. Moreover, the authors find a high degree of correlation between omitted goodwill impairment and typical agency issues such as CEO compensation, CEO reputation and debt covenant violation concerns.

A recent study by Van de Poel *et al.* (2008), with reference to a sample of listed companies in 15 EU countries that prepared financial statements according to IAS/IFRS for the period 2005-2006, reached substantially similar conclusions to those of Zucca and Campbell (*ibidem*). Through regression analysis, these authors show that companies base their goodwill impairment decisions on earnings that are “unexpectedly high” (smoothing) or “unexpectedly low” (big bath accounting) compared to expectations.

Other international studies dwell on the phenomenon of big bath earnings management, i.e., the practice of increasing goodwill impairment in first-time adoption of new accounting standards or in situations of management change in order to lower previous management results as much as possible and highlight the new management’s performance (Francis *et al.*, 1996 use the expression “to clear the decks”).

Based on research conducted in this area, tangible signs of the influence of big bath earnings management practices were reported by Jordan and Clark (2004) and by Sevin and Schroeder (2005) in the first year of application of goodwill impairment testing to group consolidated financial statements. In particular, in groups having recorded goodwill impairment losses, significant misalignments were found in the return on assets (ROA) and return on sales (ROS) ratios, which are not sensitive to goodwill impairment losses, compared to the same ratios for groups having confirmed goodwill values. They also observed that the incidence of negative operating earnings is higher in groups that have charged goodwill impairment losses compared to groups that have not. Both the cited studies reached the conclusion that in the presence of negative operating results, regardless of the recognition of goodwill loss, management chose to take advantage of the impairment test obligation to “eliminate” possible future goodwill

impairment in the belief that there would have in any case been a market reaction to negative results, whatever the size of the gap compared to expected performance.

Another series of contributions focuses on the analysis of the relationship between earnings management and goodwill impairment in the presence of CEO changes.

Masters-Stout *et al.*, (2007) consider the appointment of a new CEO as a variable able to influence decisions in relation to the goodwill impairment test. They assume that new CEOs, compared to their senior counterparts, will tend to favour the emergence of goodwill impairment losses in the early years of their appointment, offloading against previous management the responsibility for the acquisition. An earlier study conducted by Strong and Meyer (1987) came to similar conclusions using multiple discriminant analysis, moreover, demonstrating that when new executives come from outside the firm, the tendency of the new management to determine goodwill impairment losses increases significantly.

Research carried out in Italy on the phenomenon of earnings management related to goodwill impairment testing has to date focused on the general procedure of impairment and the considerable degree of technical discretion with particular reference to the identification of the CGU and the estimation of key parameters (such as assets to be allocated, fair value or cash flow calculation, interest rate) (Guatri-Bini, 2003; Momentè, 2003; Romano, 2004; Nova, 2006; Lionzo, 2007) or on specific aspects, such as changes of cash-generating units, when considered justified or not as a result of business combinations or internal reorganisations (Quagli & D'Alauro, 2010). Other empirical studies have examined the weight of goodwill or intangible assets on "total consolidated assets" (book value), on "total shareholder equity" and on "market capitalisation" (Paglietti, 2009; Pieri, 2010; Pozzoli *et al.*, 2011).

Our study seeks to provide a new contribution to existing literature in two directions: on one hand, using a deductive approach to demonstrate the existence of strong evidence of earnings increasing policies implemented through goodwill impairment test accounting according to the hypothesis whereby in a period of strong and generalized reduction in market value, it is probable that at least a proportional rescaling of the economic goodwill has taken place in the financial statements of Italian companies. On the other hand, from a comparison of the economic and financial effects of the systematic method of amortisation of goodwill and that based on the impairment test, a significant loss of self-financing capacity of Italian companies emerges, particularly evidenced by the differentials of dividends paid during the period, resulting in an alarming impoverishment of the financial condition of many Italian companies.

#### 4. Definition of the Research Hypotheses

Based on the studies mentioned in the previous section, which confirm the existence of earnings management practices related to goodwill impairment testing, the following research hypotheses are formulated via deductive logic.

➤ **Hypothesis 1 (H<sub>1</sub>):**

*"The goodwill testing accounting method leads to a lower estimate of 'economic consumption' of goodwill compared to systematic amortisation."*

More precisely, 'economic consumption' is intended as the actual loss of value attributed to goodwill in a financial year.

Under the hypothesis of adopting the accounting criterion known as the capitalisation and amortisation method, the following relational formulae can be written:

$$IL_n = A_n + ILN_n$$

where:

$IL_n$  is the overall goodwill impairment loss in the nth year

$A_n$  is the amortisation of goodwill related to the nth year  
 $ILN_n$  is the goodwill impairment, net of annual amortisation

In the case of the impairment method,  $IL_n$  must take into account the 'economic consumption' attributed to goodwill, which, in the event of its write-down, captures both the component linked to any annual consumption and that relating to a structural reduction of goodwill value recognized during the purchase-price allocation.

However, the two methods (capitalisation/amortisation method and the impairment method), could lead to different results. This is the case when:

- i. there is no economic loss of goodwill (impairment loss)
- ii. the economic loss of value is less than the annual amortisation

More precisely, under the hypothesis in point i), the absence of an economic loss of goodwill value means that the impairment method does not recognise any negative income items in the income statement, whereas according to the second method based on systematic amortisation, the income statement should nevertheless be charged with an amount corresponding to annual amortisation.

Under the hypothesis in point ii) when the impairment loss is less than the annual amortisation, according to the impairment method, the (lower) loss of value is recognised, while according to the systematic amortisation method, the income statement is debited with the higher amortisation charge, without the need to recognise the (lower) economic impairment.

➤ **Hypothesis 2 (I<sub>2</sub>):**

*“Evidence of the practice of earnings increasing of company results can be found in the fact that, in a period of severe economic crisis, the goodwill impairment test method leads to lower 'economic consumption' of goodwill compared to the systematic amortisation method.”*

Moreover, considering the effect of the impairment test vs. amortisation on accounting results and, as a consequence, on the level of payouts, leads to formulating the third research hypothesis:

➤ **Hypothesis 3 (I<sub>3</sub>):**

*“Goodwill impairment testing – ceteris paribus - implies a reduction of corporate self-financing capacity, leading to distributing higher dividends compared to the systematic amortisation method, even when the useful life of goodwill is linked to very extensive time horizons. The reduction of the amortisation capacity can be determined in the differential between dividends actually paid and those that could have been distributed assuming the amortisation method, while maintaining the same level of payout.”*

The objective of verifying the correctness of the research hypotheses requires an inductive analysis based on the empirical investigation of consolidated group financial statements of Italian companies listed on the FTSE MIB market in the period 2005-2010. It should be noted that the FTSE MIB is currently the most important share price index of the Italian Stock Exchange: the basket includes the shares of the 40 largest companies listed on Italian and foreign markets managed by Borsa Italiana. The index was created following the merger between Borsa Italiana (S&P MIB) and the London Stock Exchange and has been operational since 1 June 2009, representing approximately 80% of the capitalisation of the Italian stock market.

## 5. Methodology

### 5.1 Sample and Descriptive Statistics

As mentioned, the empirical analysis was carried out on the consolidated financial statements of Italian companies listed on the FTSE MIB market in the period 2005-2010. To be noted is that Italian companies first started adopting IAS/IFRS in 2005.

The sample composition was considered with reference to 30 June 2011, regardless of whether companies were continuously listed on the Italian stock market for all years in the observation period.

The following table shows the composition of the sample under observation in the years 2005-2010. The number of observations was 211.

**Table 1. Composition of companies observed in the period 2005-2010**

	<i>Number of companies included in the FTSE MIB at 30.06.2011</i>
2005	31
2006	31
2007	36
2008	37
2009	37
2010	39
<b>Total observations</b>	<b>211</b>

The goodwill recorded in the financial statements of companies listed on the FTSE MIB in the observation period - starting from 2005, year of first-time adoption of IAS/IFRS - increased mainly due to business combinations and following the purchase-price allocation of acquisition values.

The table below shows the composition of total goodwill in the years under observation.

**Table 2. Composition of total goodwill subject to observation**

<i>Amounts in € million</i>	<i>Total goodwill recorded in the financial statements of companies on the FTSE MIB at 30.06.2011</i>
2005	79,740.22
2006	93,314.69
2007	150,823.90
2008	156,432.70
2009	160,359.25
2010	162,762.57

It is interesting to note that the concentration index, as shown in the table below, provides a measure of the concentration of goodwill recorded in the financial statements of companies in the sample and indicates that, as at 31 December 2010, 26.98% of total goodwill was recorded in the accounts of a single company and that over half (51.34%) was concentrated in three FTSE MIB companies.

**Table 3. Goodwill concentration index at 31.12.2010**

<i>Amounts in € million</i>	<i>Total goodwill at 31.12.2010 with reference to the first n companies with the greatest amount of goodwill</i>	<i>Goodwill concentration index at 31.12.2010 <math>i_n</math></i>
$i_1$	43,912.00	26.98%
$i_3$	83,577.07	51.34%
$i_5$	109,430.25	67.23%
$i_{10}$	135,315.65	83.14%

The table below shows the number of companies under observation that in the period 2005-2010 recorded goodwill in balance sheet assets according to the IAS/IFRS rules and the number of companies recording goodwill impairment.

**Table 4. Number of companies recording goodwill in balance sheet assets and number of companies recording goodwill impairment**

	<i>Number of companies included in the FTSE MIB at 30.06.2011</i>	<i>Number of companies recording goodwill in the accounts</i>	<i>Number of companies recording goodwill impairment</i>
2005	31	29	0
2006	31	30	8
2007	36	33	8
2008	37	35	14
2009	37	36	11
2010	39	39	12
<b>Total</b>	<b>211</b>	<b>202</b>	<b>53</b>

As shown in the summary table below, overall goodwill impairment losses in the period 2005-2010 of companies listed on the Italian FTSE MIB amounted to over 5 billion euro, with a “peak” in 2008 (3.01 billion euro).

**Table 5. Composition of overall goodwill and impairment losses subject to observation**

<i>Amounts in € million</i>	<i>Total goodwill recorded in the financial statements of companies on the FTSE MIB at 30.06.2011</i>	<i>Total impairment losses recorded in the financial statements of companies on the FTSE MIB at 30.06.2011</i>
2005	79,740.22	-
2006	93,314.69	488.00
2007	150,823.90	357.00
2008	156,432.70	3,008.63
2009	160,359.25	193.27
2010	162,762.57	979.95
<b>Total impairment losses in the period 2005-2010</b>		<b>5,026.85</b>

## 5.2 Testing the First Hypothesis

According to deductive logic, the first working hypothesis indicates that

➤ **Hypothesis 1 (I<sub>1</sub>):**

*“The goodwill testing accounting method leads to a lower estimate of 'economic consumption' of goodwill compared to systematic amortisation.”*

Gray's index<sup>1</sup> (Grey 1980), which represents the normalised distance between the amounts expressed by the different sets of accounting standards, was used to test Hypothesis 1 (I<sub>1</sub>).

The method used provided evidence of how different goodwill accounting treatments significantly influence the values presented in the accounts.

For each of the companies in the sample, with reference to the period 2005-2010, the values of net income were calculated according to the capitalisation and amortisation method and the impairment method.

The calculation of Gray's comparability index highlighted the different degrees of caution of the two methods, ultimately confirming hypothesis 1 (I<sub>1</sub>).

As shown, Gray's index calculated on "net income" is constantly greater than 1 for the entire period of observation and significantly greater than 1 (and close to 2) for all other scenarios taken into consideration. It is also evident that Gray's index has higher values in "more cautious" scenarios, i.e., those with a 5 or 10-year useful life of goodwill.

**Table 6. Average values of Gray's index calculated on net income in the period 2005-2010 and expressed according to the capitalisation/amortisation, and goodwill impairment methods**

	Gray's index			
	5-year scenario	10-year scenario	15-year scenario	20-year scenario
2006	1.974	1.948	1.922	1.895
2007	1.988	1.976	1.964	1.953
2008	1.904	1.808	1.712	1.615
2009	1.994	1.988	1.982	1.976
2010	1.970	1.940	1.910	1.880

Consistent with other empirical studies, Gray's index values were classified, with reference to the "net income" amount, into three caution index bands: the first band includes values below 0.95, the second those between 0.95 and 1.05, the third those above 1.05.

The observations recorded are all in the last index band (i.e., >1.05) since, envisaging four scenarios of the useful life of goodwill, the index has values well above the threshold of the third band.

These results can be considered consistent with those of other empirical studies, which unlike that proposed in this paper, did not specifically address the accounting treatment of goodwill but rather the overall impact of the shift from domestic accounting rules (Civil Code and OIC Principles) to international standards (IAS/IFRS).

The investigations conducted so far on companies listed on the Milan Stock Exchange clearly show that, predominantly (60% of cases), net income calculated in accordance with the OIC is lower than that determined based on IAS/IFRS (Cordazzo, 2008). Furthermore, in light of the index values, this work clearly demonstrates that a significant contribution to the net income differential determined in accordance with the two different sets of accounting standards is provided precisely by the goodwill accounting treatment of the two accounting models.

### 5.3 Testing the Second Hypothesis

The second hypothesis proposed is:

➤ **Hypothesis 2 (I<sub>2</sub>):**

*“Evidence of the practice of earnings increasing of company results can be found in the fact that, in a period of severe economic crisis, the goodwill impairment test method leads to lower 'economic consumption' of goodwill compared to the systematic amortisation method.”*

To test hypothesis 2 (I<sub>2</sub>), the methodological approach included the following stages:

- i. The goodwill posted in the financial statements of companies listed on the FTSE MIB was treated with the capitalisation and amortisation method for each year in the period 2005-2010.
- ii. In cases where annual depreciation was higher than the loss determined by the impairment method in accordance with IAS 36<sup>2</sup>, it was assumed that the 'economic consumption', i.e., the impairment loss, was equal to the sum of the two components (annual amortisation and net impairment loss), i.e.,  $IL_n = A_n + ILN_n$ .

- iii. For the purpose of the simulation of the effects on goodwill, four different scenarios were envisaged, simulating varying durations of useful life of 5, 10, 15 and 20 years.
- iv. Finally, for each scenario, the differences between the “theoretical” annual amortisation relating to the period in question and the impairment losses actually recorded by the company were considered.

The “cumulative” difference in the period 2005-2010 represents the effect of the adoption of the impairment method on the accounts of FTSE MIB companies. This effect has two components:

- Economic, since the disappearance of the conventional automatism of the capitalisation and amortisation method causes 'economic consumption' of goodwill to depend exclusively on management decisions, which, as mentioned, are largely discretionary and as such open to earnings increasing policies.
- Equity, since in the presence of earnings increasing phenomena, all things being equal, an increase in balance sheet assets is generated and, as a consequence, shareholder equity. The risk also increases of distributing dividends arising from income not actually attained but rather "inflated" by said earnings management behaviour.

Below is a summary of the results obtained with the methodological steps followed to test hypothesis 2 (I<sub>2</sub>).

**Table 7. Consolidated net income differences generated by the application of the impairment test method instead of the capitalisation and amortisation method. Findings from Italian FTSE MIB companies in the period 2005-2010**

<i>Amounts in € million</i>	<i>Scenario A</i>	<i>Scenario B</i>	<i>Scenario C</i>	<i>Scenario D</i>
<i>Overall impairment recorded in the accounts</i> (a)	5,026.85	5,026.85	5,026.85	5,026.85
<i>"Theoretical" amortisation</i> (b)	139,711.77	67,342.46	43,219.36	31,157.80
<i>Surplus of impairment losses on amortisation, individual amounts</i> (c)	10.00	253.38	628.55	816.14
<i>Delta:</i> [[a) - (b + c)]	-134,694.92	-62,568.99	-38,821.06	-26,947.09

The overall effect of the adoption of the impairment test method on consolidated net results with reference to the period 2005-2010 is between 134.7 billion euro (scenario A with a 5-year useful life of goodwill) and 26.9 billion (scenario B with a 20-year useful life of goodwill). In other words, limiting the analysis to companies listed on the Italian FTSE MIB, the consolidated net results during the period in question recorded an increase (alias missing impairment) of between 26.9 and 134.7 billion euro only due to the effect of applying IAS 36 on the accounting treatment of goodwill instead of the old accounting rules that contemplated systematic amortisation of goodwill.

If we were to simulate the theoretical period of “absorption” of existing goodwill in the financial statements of companies listed on the FTSE MIB, assuming a mean intensity of impairment loss equal to that recorded in the period of observation, there would be a goodwill “duration” of approximately 332 years!

In practise, the concept of goodwill as an asset with an “indefinite useful life” has been interpreted as if it had an “infinite useful life”. What aberrations does this widespread accounting behaviour lead to? The inability to “absorb” the goodwill recorded in the accounts within a reasonable timeframe would lead in coming years to a disproportionate growth of the more unpredictable intangible component, i.e., precisely specific intangibles with an indefinite useful life and goodwill in balance sheet assets, with serious consequences not only on the metrics but also on the quality of economic-financial information, on the general reliability of equity and on the future performance of companies (several studies highlight the influence of decisions regarding impairment testing on future results (see Godfrey & Koh, 2009; Jarva, 2009; Chalmers *et al.*, 2011).

#### 5.4 Testing the Third Hypothesis

The third proposed hypothesis indicates that:

➤ **Hypothesis 3 (I<sub>3</sub>):**

*“Goodwill impairment testing – ceteris paribus - implies a reduction of corporate self-financing capacity, leading to distributing higher dividends compared to the systematic amortisation method, even when the useful life of goodwill is linked to very extensive time horizons. The reduction of the amortisation capacity can be determined in the differential between dividends actually paid and those that could have been distributed assuming the amortisation method, while maintaining the same level of payout.”*

To test the third hypothesis, the following methodological process was followed:

- i. For each company in the sample under observation, the effect on the consolidated net results of the application of the capitalisation and amortisation method was simulated for the period 2005-2010. Companies with negative consolidated financial results were excluded from the simulation. This was also justified by the need to correctly perform the self-financing calculation wherein the amortisation share applies only when economic results are positive.
- ii. The payout ratio was recorded for each company and for each year of the 2005-2010 period.
- iii. The payout ratio recorded was applied to the consolidated net results for each financial year in the period 2005-2010 in order to “derive” the dividend that, in theory, would have been distributed if, instead of applying the impairment test method, goodwill entered in the accounts had been treated with the capitalisation and amortisation method. Where the application of the capitalisation and amortisation method leads to negative net results, the “theoretical” dividend is considered to be zero.
- iv. A systematic comparison was carried out for each company between the dividends actually distributed in the period 2005-2010 and the “adjusted” dividends assuming application of the capitalisation and amortisation method.
- v. Finally, the overall effect on consolidated shareholder equity in the period 2005-2010 resulting from the application of the capitalisation and amortisation method of goodwill, as opposed to the impairment test method, was measured. This effect was measured, in the four scenarios of the useful life of goodwill taken into consideration to test Hypothesis 2 (I<sub>2</sub>), as the delta between dividends actually distributed and “adjusted” dividends.

The table below shows the main findings of the methodology applied.

**Table 8. Distributed and "adjusted" dividends: effect of "goodwill accounting" on consolidated shareholder equity. Findings from Italian FTSE MIB companies in the period 2005-2010**

<i>Amounts in € million</i>		2005	2006	2007	2008	2009	2010
<b>Scenario A 5 years</b>	Distributed dividends	14,145	14,575	16,631	8,408	9,137	8,586
	"Adjusted" dividends	10,180	9,681	10,795	4,925	4,359	4,696
	<b>Delta Self-financing capacity</b>	<b>3,965</b>	<b>4,894</b>	<b>5,836</b>	<b>3,483</b>	<b>4,778</b>	<b>3,890</b>
	<b>Delta SFC%</b>	<b>28.03%</b>	<b>33.58%</b>	<b>35.09%</b>	<b>41.42%</b>	<b>52.29%</b>	<b>45.30%</b>
<b>Scenario B 10 years</b>	Distributed dividends	14,145	14,575	16,631	8,408	9,137	8,586
	"Adjusted" dividends	10,809	10,628	12,574	5,984	5,813	6,378
	<b>Delta Self-financing capacity</b>	<b>3,336</b>	<b>3,947</b>	<b>4,057</b>	<b>2,424</b>	<b>3,324</b>	<b>2,208</b>
	<b>Delta SFC%</b>	<b>23.58%</b>	<b>27.08%</b>	<b>24.39%</b>	<b>28.83%</b>	<b>36.38%</b>	<b>25.72%</b>
<b>Scenario C 15 years</b>	Distributed dividends	14,145	14,575	16,631	8,408	9,137	8,586
	"Adjusted" dividends	11,663	11,113	13,419	6,454	6,559	7,162
	<b>Delta Self-financing capacity</b>	<b>2,482</b>	<b>3,462</b>	<b>3,212</b>	<b>1,954</b>	<b>2,578</b>	<b>1,424</b>
	<b>Delta SFC%</b>	<b>17.54%</b>	<b>23.75%</b>	<b>19.31%</b>	<b>23.24%</b>	<b>28.21%</b>	<b>16.59%</b>
<b>Scenario D 20 years</b>	Distributed dividends	14,145	14,575	16,631	8,408	9,137	8,586
	"Adjusted" dividends	12,357	11,991	13,955	6,740	6,977	7,575
	<b>Delta Self-financing capacity</b>	<b>1,788</b>	<b>2,584</b>	<b>2,676</b>	<b>1,668</b>	<b>2,160</b>	<b>1,011</b>
	<b>Delta SFC%</b>	<b>12.64%</b>	<b>17.73%</b>	<b>16.09%</b>	<b>19.84%</b>	<b>23.66%</b>	<b>11.77%</b>

The results, which lend themselves to further study, are very interesting and can be summarised as follows:

- In the period 2005-2010, the reduction of self-financing capacity (measured by excess dividends distributed with respect to the application of the goodwill capitalisation and amortisation method) range from 11.89 billion euro (scenario with a 20-years amortisation period) to 26.85 billion euro (scenario with a 5-year amortisation period).
- The delta corresponds to a range of between 17% and 38% compared to the total dividends distributed during the period in question.
- In several cases, moreover, the difference in accounting treatment of goodwill leads, at the consolidated level, to a transition from positive economic results to losses for the year with a consequent inability to distribute dividends.

From the simulation performed on the data for the years 2011 and 2012, a substantial reversal of the trend emerged compared to the 2005-2010 period. This is due to the extensive impairment losses of goodwill recorded in the balance sheets of banks and some large industrial companies (total impairment losses recorded in the consolidated financial statements of companies on the FTSE MIB are 33.89 billion euro in 2011 and 11.31 billion euro in 2012, corresponding respectively to 23.3% and 8.5% of total goodwill).

The following section offers a number of concluding remarks.

## **6. Research Conclusions, Implications and Limitations**

The research carried out concerns the analysis of an issue that in many ways is still unexplored, namely, the impact of goodwill accounting on company results and equity.

The study had the objective of testing the impact of applying IAS 36 to the consolidated financial statements of Italian companies listed on the FTSE MIB segment in the period 2005 to 2010, with two convictions to prove:

- 1) Goodwill impairment testing, broadening the areas of technical discretion of directors, is particularly prone to the instrumental assessment of financial statements in order to practise accounting behaviours aimed at earnings management.
- 2) The distribution of dividends clearly indicates a reduction of self-financing potential in the transition from systematic goodwill amortisation to impairment test accounting.

In particular, it has been shown that:

- In the period 2008-2010, i.e., the years in which the economic and financial crisis was most felt, the percentage difference between dividends actually distributed and those “adjusted” for figurative amortisation of goodwill tended to increase. This finding, in the opinion of the authors, is indicative of the use of goodwill impairment testing to pursue earnings increasing practices.
- The comparison of the intensity of losses of goodwill and the trend of stock market capitalisation of companies on the FTSE MIB in the period 2005-2010 showed a decrease in market value of companies listed on the FTSE MIB, which during the period in question was approximately 60% (even considering the varied composition of companies included in the index), while the intensity of goodwill impairment was approx. 3.75%<sup>3</sup> in the six years under observation and, therefore, equal to approx. 0.63% on an annual basis. In the opinion of the authors, this provides clear evidence of the existence of earnings increasing related to the goodwill accounting treatment.

A limitation of the survey is the lack of differentiation between industrial and financial or insurance companies subject to sector authority controls. In particular, for banks, the distribution of dividends takes place once the supervisory capital constraints have been complied with, which also include particular caution when goodwill is recorded in the accounts. Removal of this survey limitation could certainly provide additional evidence of the distorting effects of earnings management practices on corporate economic performance and equity.

In conclusion, it should be pointed out that in the coming years accounts will be increasingly “goodwill based”, i.e., the weight of goodwill on total invested capital is destined to grow. Not because of a desirable improvement in goodwill measurement metrics or the greater aptitude of accounting standards in highlighting intangible company assets (including goodwill) but due to the combined effects of two circumstances: the natural emergence of “new” goodwill in future business combination transactions and the (unnatural) low intensity of goodwill impairment already recorded in the accounts. In light of this, an increase in the level of volatility of economic performance, a continued and dangerous depletion of company equity and a gradual reduction in the reliability of quantitative determinations of financial statements can be expected.

Among the possible solutions to the harmful consequences that may result from mismanagement of goodwill accounting, other than a drastic “return” to systematic amortisation, hybrid hypotheses would be desirable, namely, solutions that on one hand maintain the impairment test and, on the other, set constraints that are binding to a greater or lesser extent on the distribution of dividends in the presence of goodwill. One could, for example, provide for the distribution of dividends within the limits of reserves available to cover goodwill in the balance sheet assets or introduce obligations to allocate provisions in the presence of goodwill, as already occurs for the creation of supervisory capital in the financial statements of banks.

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## End Notes

<sup>1</sup> Gray's index is determined as follows:

$$\text{Gray's index} = 1 - \frac{\text{ACC.STD A Value} - \text{ACC.STD B Value}}{|\text{ACC.STD A Value}|}$$

Gray's index has a value of 1 if the value of the amount expressed by the accounting standards of set B is greater than the value resulting from the application of the accounting standards of set A. A value of less than 1, on the other hand, indicates a more cautious approach of the accounting standards of set A compared to set B - see Gray, 1980 (pages 64-76) and more recent recently, Weetman *et al.*, 1998 (pages 189-208).

<sup>2</sup> Cases of goodwill *impairment loss* exceeding the "theoretical" amortisation amount are very rare throughout the time horizon of observation: assuming a 5-year useful life of goodwill, only one case (Prysmian) was observed with a fairly limited delta between theoretical amortisation and impairment loss allocated to the accounts (10 million euro, albeit against goodwill of 15 million euro). The number of cases increases assuming a 10-year useful life (in addition to Prysmian in 2010, Banca Popolare, Parmalat and Tenaris in 2008, Exor in 2009 and Eni in 2010) and 15-year useful life (the number of cases is the same as in the 10-year scenario) and the case of Intesa San Paolo in 2008 when assuming a 20-year useful life of goodwill. Throughout the period under observation (2005-2010), the total surplus of the impairment losses recognised on the proportion of theoretical amortisation amounted to 10 million euro in the 5-year scenario, 253.38 million euro in the 10-year scenario, 628.55 million euro in the 15-year scenario (although the number of cases remained unchanged compared to the 10-year scenario, the delta reflects the effect of dilution of amortisation over an additional 5-year period) and 813.14 million euro in the 20-year scenario.

<sup>3</sup> The calculation was performed by dividing the total amount of write-downs recorded by companies listed on the FTSE MIB in the period 2005-2010 by the overall average goodwill recorded in the accounts in the same period.

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