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The Association Between Goodwill Impairment and Discretionary Accruals: Portuguese Evidence

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Abstract

Portuguese listed firms (as well all EU companies) have been required to use IFRS and consequently IFRS 3 – *Business Combinations* and IAS 36 – *Impairments of Assets* since 2005. On adopting IFRS 3 goodwill is no longer amortised but is subject to an annual impairment test in accordance with IAS 36. Previous studies suggest that the impairment of goodwill decision is influenced by managers (e.g. Beatty & Weber, 2006; Van de Poel, Maijoor, & Vanstraelen, 2009; Jahmani, Dowling, & Torres, 2010), which may exercise discretion in determining the recoverable value of goodwill. Therefore, this paper investigates whether Portuguese listed companies use goodwill impairment loss to manage earnings. Using a sample of 33 Euro next Lisbon non-financial firms over a period of 6 years, from 2005 through 2010, we find that the goodwill impairment amount is significantly positively related to earnings management, suggesting that IAS 36 provides managers with discretion for goodwill write-off.

Keywords: goodwill impairment, earnings management, discretionary accruals.

I. INTRODUCTION

In 2004, the International Accounting Standard Board (IASB) revised International Accounting Standard (IAS) 36 - *Impairment of assets*, IAS 38 - *Intangible assets* and introduced International Financial Reporting Standards (IFRS) 3 - *Business Combinations*, which drastically altered the accounting procedures for goodwill. On adopting IFRS 3 goodwill is no longer amortised but is subject to an annual impairment test in accordance with IAS 36. Therefore, the IASB's belief that goodwill does not necessarily decline in value on a routine basis but rather has an indeterminate life led to their conclusion in IFRS 3 that goodwill should not be amortized but instead must be tested at least annually for impairment.

Since 1 de January 2005 all listed EU companies are required to prepare their consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) (Regulation, European Commission, 1606/2002). Therefore, Portuguese listed companies are required to use the IAS 36, IAS 38 and IFRS 3 to recognise the goodwill and to evaluate whether the goodwill have been impaired.

The objective of IAS 36 standard is the reflection of the true value of a firm's assets on its balance sheet. More specifically, IAS 36 is designed is to ensure that

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assets are carried at no more than their recoverable amount and to define how the recoverable amount is calculated. IAS 36 applies to most long term assets, and thus goodwill amongst others.

Specifically firms need to assess whether the carrying amount of goodwill (i.e. the value on the balance sheet) does not exceed the true or real value. If the carrying value of goodwill exceeds the recoverable amount, impairment is necessary. However, IAS 36 provides managers with considerable discretion about how to assess the true value of the firm's goodwill (Beatty & Weber, 2006; Van de Poel, Maijoor, & Vanstraelen, 2009; Jahmani, Dowling, & Torres, 2010).

Thus, the decision of writing down the value of goodwill and the magnitude of impairment loss allow management of listed companies to exercise judgment in determining the recoverable value of goodwill and provides a good chance for managers to opportunistically manage the reported earnings. Previous empirical studies also suggest that firms use their discretion over goodwill impairment to manage earnings. For example, Van de Poel, Maijoor, and Vanstraelen (2009) study whether the IFRS goodwill impairment test is used as tool to manage earnings. Using a sample of listed companies in 15 EU countries, preparing financial statements under IFRS in the period 2005-2006, their findings support that companies typically take their impairments when earnings are 'unexpectedly' high (smoothing) or when they are 'unexpectedly' low (big bath accounting).

The IASB's approach in IAS 36 seems to give management substantial flexibility to exercise judgment in determining and reporting goodwill impairment losses. Therefore, this paper investigates whether Portuguese listed companies use goodwill impairment to manage earnings. Using a sample of 33 Euro next Lisbon non-financial firms over a period of 6 years, from 2005 through 2010, we find that the goodwill impairment amount is significantly positively related to earnings management, suggesting that IAS 36 provides managers with discretion for goodwill write-off.

The study makes some contributions to the existing literature. First, a firm's decision to impair the goodwill or not, can be an important corporate event due to the amounts involved and their implication on the firm performance and market value (Bartov, Lindahl, & Ricks, 1998; Hirschey & Richardson, 2002). Therefore, studying the issue of whether IAS 36 constrains management's discretion in recognizing goodwill asset impairment losses appear to be important. Second, standard setters need to know which standards and which accruals are being used to manage earnings. Such information will highlight areas in need of corrective action by the standard setters. Third, this paper represents the first known study examining the association between goodwill impairment losses and accruals management in Portugal. Furthermore, the findings of this study should be of interest to regulators and investors, which are concerned about earnings management and improving the quality of financial reporting.

This paper is structured as follows. In section two, we give a background on IFRS goodwill accounting. In section three, we provide an overview of the literature review and develop testable hypotheses. We present the variable measurement and describe the research design in section four. The characteristics of the sample and the main results are presented in section five. Finally, section six concludes the study.

II. BACKGROUND ON IFRS GOODWILL ACCOUNTING

Goodwill can arise in two different ways: (1) it can be internally generated or; (2) it can be acquired as part of the acquisition of another company (business combination). Goodwill shows up in the financial statements only if an acquisition has occurred. Goodwill is the difference between the cost of the purchase and the fair value of the net assets. Internally generated goodwill is not recognised.

However, accounting for goodwill has been one of the most contentious issues in the history of modern accounting. Initial recognition as well as measurement subsequent to initial recognition has been largely debated by standard-setters (Shahwan, 2004). Over the years, there have been various accounting treatments of purchased goodwill as follows: immediate write off against reserves; capitalisation with amortization over a pre-selected number of years; and capitalisation with annual impairment reviews (IASC, 1983, 1993; Hubenthal, Mozes, Tetyakov, & Kockelboreu, 2002; Richard, 1996, 2005).

Before 2004, goodwill accounting was regulated by IAS 22 - *Business Combinations* requiring goodwill arising from acquisition to be recognized and amortized on a systematic basis over its useful life. Critics argued that goodwill does not necessarily decrease on a regular and systematic basis, which is inconsistent with the requirement of amortizing a fixed amount of goodwill every year (Hubenthal, Mozes, Tetyakov, & Kockelboreu, 2002; Richard, 1996, 2005).

In March 2004, the IASB issued IFRS 3, introducing new rules on business combinations and the impairment test for intangible assets acquired. IFRS 3 replaced IAS 22 - *Business Combinations* and amended versions of IAS 36 - *Impairment of assets* and IAS 38 - *Intangible assets*. IFRS 3 requires that business combinations be accounted for under the purchase method and replaced the straight-line amortization of goodwill with an impairment test. Thus, IFRS 3 requires goodwill acquired individually or in a business combination to be recognized as an asset, prohibits amortization of goodwill acquired and instead requires the goodwill to be tested for impairment annually.

The IAS 36 prescribes the procedures that an entity applies to ensure that its assets are carried at no more than their recoverable amount. An asset is carried at more than its recoverable amount if its carrying amount exceeds the amount to be recovered through use or sale of the asset. If this is the case, the asset is described as impaired and the Standard requires the entity to recognise an impairment loss.

If it is not possible to estimate the recoverable amount of the individual asset, an entity shall determine the recoverable amount of the cash-generating unit to which the asset belongs. Determination of the cash-generating unit is left to the management's judgement.

The recoverable amount of an asset or a cash-generating unit is the higher of its fair value less costs to sell and its value in use. Value in use is defined as "the present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life" (IASB, 2004).

According to IAS 36, the following elements shall be reflected in the calculation of an asset's value in use: (a) an estimate of the future cash flows the entity expects to derive from the asset; (b) expectations about possible variations in the amount or timing of those future cash flows; (c) the time value of money, represented by the current market risk-free rate of interest; (d) the price for bearing the uncertainty

inherent in the asset; and (e) other factors, such as illiquidity, that market participants would reflect in pricing the future cash flows the entity expects to derive from the asset.

Under IAS 36, to test for impairment, goodwill must be allocated to each of the acquirer's cash-generating units, or groups of cash-generating units, that are expected to benefit from the synergies of the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units or groups of units. Each unit or group of units to which the goodwill is so allocated shall represent the lowest level within the entity at which the goodwill is monitored for internal management purposes; and not be larger than an operating segment determined in accordance with IFRS 8 -*Operating Segments*.

A cash-generating unit to which goodwill has been allocated shall be tested for impairment at least annually by comparing the carrying amount of the unit, including the goodwill, with the recoverable amount of the unit. If the carrying amount of the unit exceeds the recoverable amount of the unit, the entity must recognise an impairment loss.

The impairment loss is allocated to reduce the carrying amount of the assets of the unit (group of units) in the following order: first, reduce the carrying amount of any goodwill allocated to the cash-generating unit (group of units); and then, reduce the carrying amounts of the other assets of the unit (group of units) pro rata on the basis. Reversal of an impairment loss for goodwill is prohibited.

Summing up, the IAS 36 requires managers to estimate carrying amount of goodwill at the cash-generating unit (group of units). Because these estimates are not based on actively traded market prices, they are not verifiable and hence are open to considerable manipulation (Holthausen & Watts, 2001). Watts (2003) argues that the allocation of goodwill among to the cash-generating unit (group of units) is arbitrary because goodwill represents joint benefits accrued to all reporting units or the firm as a whole. As a result, goodwill impairment test may have a significant impact on corporate earnings.

III. LITERATURE REVIEW AND TESTABLE HYPOTHESES

IFRS 3 requires that the value of goodwill needs to be tested annually to determine whether any changes in value have occurred. IAS 36 contains the specific requirement that goodwill is subject to a mandatory annual test of impairment and should be impaired to fair value, if necessary. Evaluation of fair value and assessment of impairment of goodwill requires management judgment.

The decision to report a goodwill impairment loss can be influenced by a number of factors. These causes include economic factors and earnings management factors (Zucca & Campbell, 1992; Francis, Hanna & Vincent, 1996; Alciatore, Dee, Easton, & Spear, 1998).

In fact, IFRS 3 and IAS 36 lead to the need for more professional judgment, which can bring a higher degree of subjectivity in the valuation of goodwill in the financial statements. So, even though an annual impairment test is mandatory, the actual recognition of a goodwill impairment loss is still subject to management's discretion and is therefore highly subjective (Lemans, 2009; Haron & Atan, 2010).

Goodwill impairment losses affect the magnitude of the accruals, because they lower the reported earnings while they have no influence on the cash flows from operations. Therefore, accounting for goodwill impairment loss provides significant scope for earnings management.

Prior literature shows that goodwill impairment losses have been used for earnings management (e.g. Beatty & Weber, 2006; Van de Poel, Maijoor, & Vanstraelen (2009); Jahmani, Dowling, & Torres, 2010). Using US data, Beatty and Weber (2006) show empirically that in the adoption of SFAS 142, firms' equity market concerns affect their preference for above-the-line vs. below-the-line accounting treatment of goodwill, and firms' debt contracting, bonus, turnover, and exchange delisting incentives affect their decisions to accelerate or delay expense recognition. Giacomino and Akens (2009) examine the effect of goodwill write-downs on earnings quality for 2008 and 2009. Their results suggest that US firms use goodwill impairments as a tool for earnings management for 2009. Jahmani, Dowling, and Torres (2010), using also US data, test whether management deliberately selects the timing of goodwill impairment recognition as a means to smooth the company's earnings. Their results suggest that most of companies are attempting to manage the volatility of earnings by avoiding taking impairment losses in the period studied as to avoid exacerbating the losses.

Haman and Jubb (2008) examine earnings management behaviour surrounding the change to the treatment of goodwill upon adoption of IFRS. Using a sample of listed Australian companies, they find that discretionary accruals of goodwill firms are higher than non-goodwill firms in the adoption year of the new goodwill rule.

Van de Poel, Maijoor, and Vanstraelen (2009) study whether the IFRS goodwill impairment test is used as tool to manage earnings. Using a sample of listed companies in 15 EU countries, preparing financial statements under IFRS in the period 2005-2006, their findings support that companies typically take their impairments when earnings are 'unexpectedly' high (smoothing) or when they are 'unexpectedly' low (big bath accounting).

Given that recoverable values are not readily available for many of the cash-generating unit (group of units) to which goodwill balances were assigned, managers enjoy a certain amount of discretion when applying the impairment test. Therefore, it is predicted that there is a relationship between goodwill impairment loss and earnings management.

H_1: goodwill impairment loss is related to earnings management

IV. VARIABLE MEASUREMENT AND RESEARCH DESIGN

4.1. Measuring Earnings Management

Following standard accounting literature, we use discretionary accruals as a proxy for earnings management. Discretionary accruals are estimated using both the cross sectional variation of the Jones model (1991) and the cross sectional variation of the modified Jones model proposed by Dechow, Sloan, and Sweeney (1995), that are commonly used by most of earnings management research (Caneghem, 2002; Klein, 2002; Koh, 2003; Jaggi & Leung, 2007; Liu & Lu, 2007). Furthermore, recently some researchers have argued that current discretionary accruals are the most powerful

models for estimating discretionary accruals among the existing models (Guay, Kothari, & Watts*,* 1996; Ashbaugh, LaFond, & Mayhew*,* 2003; Jaggi & Leung, 2007).

The Jones' model consists of regressing total accruals (*TACC*) on two variables: the change in revenues (*⊿Rev*), which models the normal component of working capital accruals; and the level of gross property, plant and equipment (*PPE*), included to control for the non-discretionary component of depreciation and amortisation expense, the main component of long-term accruals. Both variables and the intercept are divided by lagged total assets in order to avoid problems of heteroskedasticity. Non-discretionary accruals (*NDACC_Jones*) are the predictions from the ordinary least squares (OLS) estimation of model (1), while discretionary accruals (*DACC_Jones*) are the residuals.

The specific Jones model is as follows:

$$\frac{TACC_{it}}{TA_{it-1}} = \alpha_1 (\frac{1}{TA_{it-1}}) + \alpha_2 (\frac{\Delta \operatorname{Re} v_{it}}{TA_{it-1}}) + \alpha_3 (\frac{PPE_{it}}{TA_{it-1}}) + \varepsilon_{it} \qquad \textbf{(1)}$$

Where:

TACC = total accruals in year t, calculated as the difference between net income and operating cash flows.

TA = total assets at the beginning of year t.

Δ *Rev* = change in revenues.

PPE = gross property, plant and equipment.

i,t = firm and year index.

The modified Jones model differs from the original Jones model in that the change in revenues is adjusted for the change in receivables (*⊿Rec*). Non-discretionary accruals (*NDACC_ModJones*) are the predictions from the OLS estimation of model (2), while discretionary accruals (*DACC_ModJones*) are the residuals.

The modified Jones model is as follows:

$$\frac{TACC_{it}}{TA_{it-1}} = \alpha_1 (\frac{1}{TA_{it-1}}) + \alpha_2 (\frac{\Delta \operatorname{Re} v_{it} - \Delta \operatorname{Re} c_{it}}{TA_{it-1}}) + \alpha_3 (\frac{PPE_{it}}{TA_{it-1}}) + \varepsilon_{it} \qquad \textbf{(2)}$$

Where:

TACC; TA; Δ *Rev; PPE; i,t* = as defined previously.

Δ *Rec* = change in accounts receivable.

4.2. Measuring Goodwill Impairment

Goodwill Impairment (GW_Impair), is measure as the reported goodwill impairment amount for firm "i" in year "i" deflated by the total asset.

4.3. Control Variables

Given that goodwill impairment is not the sole factor affecting earnings management, several control variables are introduced to isolate other contracting incentives that may be influence managers' accounting choices. Previous studies suggest that audit quality (*Big_4*), board size (*Bsize*), leverage (*Lev*), operating cash flows (*Cash flows*), performance (*Performance*) and political costs (*Size*) are associated with earnings management (e.g., DeFond & Jiambalvo, 1994; Eisenberg, Sundgren, & Wells*,* 1998; Becker, DeFond, Jiambalso*,* & Subramanyam, 1998; Peasnell, Pope, & Young*,* 2000; Xie, Davidson, & DaDalt*,* 2003; Caneghem, 2004; Gul, Tsui, &

Dhaliwal, 2006; Jiang, Lee, & Anandarajan, 2008; Ali, Salleh, & Hassan, 2008; Lin and Hwang, 2010; Chen, Cheng, & Wang, 2010; Alves, 2011).

Audit quality (*Big_4*). Audit quality research has focused primarily on differences between big firm auditors and non-big firm auditors. The underlying rationale is that larger audit firms have greater incentives to detect and reveal management misreporting because partners can be more effectively monitored in larger audit firms (Watts & Zimmerman, 1981), and they have more to lose when an audit failure occurs (Bauwhede, Willekens, & Gaeremynck, 2003). In this sense, numerous studies suggest that higher quality auditors reduce the level of accrual earnings management (e.g., Becker, DeFond, Jiambalso & Subramanyam, 1998; Gul, Lynn, & Tsuy, 2002; Xie, Davidson, & DaDalt, 2003; Krishnan, 2003; Caneghem, 2004; Gul, Tsui, & Dhaliwal, 2006; Jordan, Clark, & Hames, 2010; Lin & Hwang, 2010).

Board size (*Bsize*). According to Jensen (1993) *board size* is related to board effectiveness. The higher the number of members on the board the greater the monitoring activity of management. If large boards enhance monitoring, they would be associated with less use of earnings management. Eisenberg, Sundgren, and Wells (1998); Alves (2011); Xie, Davidson, and DaDalt (2003) and Ebrahim (2007) find that larger boards are associated with lower levels of discretionary accruals.

Leverage (*Lev*). Because higher debt levels increase the risk of violating debt covenants, managers may be motivated to manipulate earnings to comply with debt covenants (Ali, Salleh, & Hassan, 2008; Jiang, Lee, & Anandarajan, 2008). However, monitoring by external lenders reduces the opportunities to manipulate earnings (Park & Shin, 2004). Chung, Firth, and Kim (2002) and Park and Shin (2004) find a negative relationship between leverage and earnings management.

Operating cash flows (*Cash flows*). DeFond and Jiambalvo (1994); Dechow, Sloan, and Sweeney (1995); Peasnell, Pope, and Young (2000); Chen, Elder, and Hsieh (2007) and Yang, Lai, and Tan (2008) find that operating cash flows are negatively associated with discretionary accruals, suggesting that firms with strong operating cash flows are less likely to use discretionary accruals to engage in earnings management.

Performance (*Performance*). Chen et al. (2006); Shah, Zafar, and Durrani (2009) and Chen, Chen, and Wang (2010) provide evidence suggesting that firms with lower *performance* have higher behaviour of earnings management.

Political costs (*Size*). Positive accounting theory suggests that managers of large firms are more likely to exploit latitude in accounting to reduce political costs (Watts & Zimmerman, 1978). Therefore, large firms are more likely to choose income-decreasing earnings management in order to reduce the probability of adverse impact from political exposure (the political cost (size) hypothesis). In this vein, Peasnell, Pope, and Young (2000); Jiang, Lee, and Anandarajan (2008) and Banderlipe (2009) find that larger firms are associated with lower absolute discretionary accruals. On the other hand, large firms face more pressures than small firms to meet or beat the analysts' expectations (Barton & Simko, 2002). Chung, Firth, and Kim (2002) and Chen, Elder, and Hsieh (2007) find that larger firms are associated with higher absolute discretionary accruals.

4.4. Regression Model

This study uses the following OLS regression model to assessing the association between goodwill impairment and discretionary accruals:

$$DACC_{it} = \beta_0 + \beta_1(GW\_Impair_{it}) + \beta_2(Big\_4_{it}) + \beta_3(Bsize_{it}) + \beta_4(Lev_{it}) +$$
$$\beta_5(Cash\ flows_{it}) + \beta_6(Performance_{it}) + \beta_1(Size_{it}) + \varepsilon_{it} \qquad \textbf{(3)}$$

Where:

$DACC_{it}$ = discretionary accruals of firm i for period t by using two different proxies for earnings management: Jones model and the modified Jones model.

GW_Impair_{it} = is measure as the reported goodwill impairment amount for firm "i" in year "i" deflated by the total asset.

Big_4_{it} = dummy variable: 1 if the auditor is a Big4 and 0 otherwise.

$Bsize_{it}$ = number of members on the board of firm i for period t.

Lev_{it} = ratio between the book value of all liabilities and the total assets of firm i for period t.

$Cash\ flows_{it}$ = ratio between the operating cash flows and the total assets of firm i for period t-1.

$Performance_{it}$ = diluted earnings per share of firm i for period t.

$Size_{it}$ = logarithm of market value of equity of firm i for period t.

ε_{it} = residual term of firm i for period t.

β_0 is a constant, β_1 to β_7 are the coefficients.

4.5. Sample Selection

The initial sample includes all companies whose stocks are listed, in the main market, in Euro next Lisbon. A total of 51, 51, 51, 50, 49 and 52 companies were listed at the year end of 2005, 2006, 2007, 2008, 2009 and 2010 respectively (304 firm-year observations in total). We select 2005 as the starting period because it is the year that Portuguese listed firms have been required to use both IAS 36 and IFRS 3.

Foreign companies (20 in total) are excluded. Companies not having shares listed in the previous year and companies whose shares were delisted in the following year are also excluded (52 in total). Companies (4 in total) with missing data are also excluded. Financial companies (30 in total) are excluded, too. As a result, the final sample size is 33 non-financial companies per year and, thus, 198 observations in total. This reduced number of observations may influence some results. Nevertheless, this limitation is an immediate consequence of the small size of the Portuguese stock market.

Information on goodwill impairment magnitude, audit quality (Big 4 audit firm or non-Big 4 audit firm), diluted earnings per share, net income, total assets, total liabilities, total shareholders' equity (book value of equity), revenues, gross property, plant and equipment and receivables are collected from the Annual Report and Corporate Governance Report. Both Annual Report and Corporate Governance Report are available on-line at www.cmvm.pt. We obtain stock price data from the Euro next Lisbon, which allows measuring the variable firm size.

V. RESULTS AND DISCUSSION

5.1. Descriptive Statistics

Table 1 presents the sample descriptive statistics for the variables used in this research. *GW_Impair* variable represents on average 0.9 percent of the total assets of the company (with a median of 0.000). *Big4* auditors are used by 73.3 percent of the sample firms. Board size (*Bsize*) is comprised of approximately 8 members (with a median of 8 members). Because the minimum number of members on the board is 3 but the maximum number of members is 23, there exist large differences across different firms for this variable. *Lev* variable represents on average 4.389 of the total assets of the company (with a median of 1.967). *Cash flows* variable represents on average 7.1 of the total assets of the company (with a median of 7.3). The descriptive statistics of the *Performance* show that, on average, firms in our sample report diluted earnings per share with a mean of 0.099 (with a median of 0.148). The mean of firm size (*Size*) is about EUR 1.147 million with a minimum of EUR 1.740 thousand and a maximum of EUR 16.345 million.

Table 1
Summary of Descriptive Statistics
Number of observations: 198; Period: 2005-2010

	Mean	Median	Min.	Max.
GW_Impair	0.009	0.000	0.003	0.126
Big_4	0.733	1.000	0.000	1.000
Bsize	8.150	8.000	3.000	23.000
Lev	4.389	1.967	0.285	8.259
Cash flows	0.071	0.073	-0.187	0.297
Performance	0.099	0.148	-4.347	2.890
Size	20.215	20.215	16.991	24.424

GW_Impair represents the goodwill impairment magnitude; *Big_4* dummy variable which takes a value 1 if the auditor is a Big_4; *Bsize* is the number of members of the board; *Lev* represents the ratio between the book value of all liabilities and the total assets; *Cash flows* is the ratio between the operating cash flows and the total assets; *Performance* is the firm's performance; *Size* represents the firm's size.

Spearman correlations between the explanatory variables are documented in Table 2. The binary variable (*Big_4*) is not included in the Table, given that the Pearson correlation coefficient is not computed to nominal variables.

The analysis of Table 2 shows that there are some significant correlations between the variables. Goodwill Impairment (*GW_Impair*) is negatively associated with leverage (*Lev*), suggesting that highly leveraged firms tend to have lower amount of goodwill impairment loss. *Size* is positively correlated with *GW_Impairment*, suggesting that large firms have high goodwill impairment magnitude. A negative correlation between *Lev* and *Bsize* indicates that firms with high leverage tend to have smaller boards. *Size* is positively correlated with *Bsize*, suggesting that large firms have greater board size. A negative correlation between *Lev* and *Performance* indicates that firms with high leverage tend to have lower performance. *Size* is negatively associated with *Lev*, suggesting that larger firms have lower leverage constraint levels. *Size* is positively with *Performance*, suggesting that larger firms have higher performance.

Correlation coefficients are, in general, low (below the 0.9 threshold) (Tabachnick & Fidell, 2001), suggesting the absence of serious statistical problems related with multicollinearity.

Table 2
Pearson Correlation Coefficients Matrix

	GW_Impair	Bsize	Lev	Cash flows	Performance	Size
GW_Impair	1					
Bsize	-0.100	1				
Lev	-0.155**	-0.161**	1			
Cash flows	-0.055	-0.080	-0.036	1		
Performance	0.077	0.148	-0.207***		1	
Size	0.222***	0.273***	-0.187***	-0.137	0.378***	1

GW_Impair represents the goodwill impairment magnitude; *Bsize* is the number of members of the board; *Lev* represents the ratio between the book value of all liabilities and the total assets; *Cash flows* is the ratio between the operating cash flows and the total assets; *Performance* is the firm's performance; *Size* represents the firm's size.
*** Correlation is significant at the 0.01 level (2-tailed) and
** 0.05 level (2-tailed).

5.2. Regression Results

Table 3 presents OLS regression estimates for the equation developed in section 4.

Table 3
Regression Results
Number of observations: 198; Period: 2005-2010

Dependent variable	DACC_ Jones Model	DACC_ ModJones Model
Independent variables	Coefficient	Coefficient
Constant	0.353***	0.335***
GW_Impair	0.042**	0,041**
Big_4	0.001	0.002
Bsize	-0.013***	-0.012***
Lev	0.007*	0.006*
Cash flows	-0.128***	-0.098***
Performance	-0.006	-0.001
Size	0.020***	0.019***
R-squared	61,34%	58,83%
Adjusted R-squared	59,63%	57,02%
F-statistic	36.034***	32.456***

DACC represents discretionary accruals; *GW_Impair* represents the goodwill impairment magnitude; *Big_4* dummy variable which takes a value 1 if the auditor is a Big_4; *Bsize* is the number of members of the board; *Lev* represents the ratio between the book value of all liabilities and the total assets; *Cash flows* is the ratio between the operating cash flows and the total assets; *Performance* is the firm's performance; *Size* represents the firm's size.
*** Significant at the 1-percent level;
** Significant at the 5-percent level; and
* Significant at the 10-percent level.

Table 3 shows that goodwill impairment amount is significantly positively related to discretionary accruals, suggesting that IAS 36 provides managers too much discretion for goodwill write-off. This result corroborates the idea that if IAS 36 involves managers' estimation of parameters, such as cash flow and discount rate, the subjective component in the determination of the amount of goodwill impairment loss to recognise may give rise to earnings-management opportunities.

As in Eisenberg, Sundgren, and Wells (1998); Xie, Davidson, and DaDalt (2003) and Ebrahim (2007), we document a negative relationship between the *Bsize* and the discretionary accruals, suggesting that the higher the number of the directors on the board the lower is the likelihood to use accruals to manage earnings. This result seems to indicate that larger boards might be more effective in monitoring managerial behaviour. *Lev* is significantly positive, providing evidence that an increase in leverage encourage managers to use more accruals to manage earnings to avoid debt covenant violation, confirming the prediction and results of DeFond and Jiambalvo (1994) and Jiang, Lee, and Anandarajan (2008). *Cash flows* are negatively associated with discretionary accruals, suggesting that firms with strong operating cash flows are less likely to use discretionary accruals to engage in earnings management, which confirms the findings of DeFond and Jiambalvo (1994); Dechow, Sloan, and Sweeney (1995); Peasnell, Pope, and Young (2000); Chen, Elder, and Hsieh (2007) and Yang, Lai, and Tan (2008). Finally, as in Chung, Firth, and Kim (2002); Chen, Elder, and Hsieh (2007) and Yang, Lai, and Tan (2008), we find that large firms have a higher level of earnings management. Results suggest no evidence that *Big_4* and *Performance* affect the levels of earnings management.

VI. SUMMARY AND CONCLUSIONS

In 2004, the issuance of the new standard IFRS 3 requires that goodwill will be impaired annually based on fair value estimates of the acquired business. The impairment test replaces the annual depreciation of goodwill that was used previously.

Since 1 January 2005 all public companies listed on regulated capital markets within European Union, among with the Euro next Lisbon, have been required to use IFRS as a basis for preparation of their consolidated financial statements. Consequently, since 1 January 2005 Portuguese companies listed on Euro next Lisbon, have been required to use both IFRS 3 and IAS 36 to test goodwill impairment.

IAS 36 prescribes the procedures that a company should apply to ensure that its assets are carried at no more than their recoverable amount, this is the higher of the amount to be realised through use or sale of the asset. However, the IAS 36 provides managers with considerable discretion about how to assess the true value of goodwill. There is significant evidence that the impairment of goodwill decision is influenced by managers (e.g., Beatty & Weber, 2006; Van de Poel, Maijoor, & Vanstraelen, 2009).

If the carrying value of asset exceeds the recoverable amount, impairment is necessary. However, in their impairment test managers are able to exercise their discretion over the calculation of this recoverable amount (Caplan & Harris, 2002). Consequently, the standard provides managers with considerable discretion about how to assess the true value of the goodwill acquired in business combinations.

Consistent with this idea, this paper investigates whether Portuguese listed companies use goodwill impairment to manage earnings. Using a sample of 33 Euro next Lisbon non-financial firms over a period of 6 years, from 2005 through 2010, we find that the goodwill impairment amount is significantly positively related to earnings management, suggesting that IAS 36 provides managers too much discretion for goodwill write-off. This result corroborates the idea that if IAS 36 involves managers' estimation of parameters, such as cash flow and discount rate, the subjective component in the determination of the amount of goodwill impairment loss to recognise may give rise to earnings-management opportunities.

Moreover, the results also reveal that there is less earnings management when the board size is large and when cash flows are high and that there is more earnings management when leverage and political costs are high.

The findings of this study make the following contributions. First, the results appear to suggest that Portuguese listed firms use goodwill impairment as a tool to make earnings management. This result seems to suggest that IAS 36 does not to contribute to improve financial reporting quality. Second, the findings are relevant for standard-setters, suggesting that their should consider opportunities for earnings management in setting accounting standards, mainly in the case of "goodwill impairment" standard. Prevention of earnings management is needed to further insure comparability of accounting numbers. Finally, investors may also benefit from the findings because they provide insight into the impact of goodwill impairment test on earnings quality.

This study has, however, some limitations. First, the reduced number of observations may influence some results. Nevertheless, this limitation is an immediate consequence of the small size of the Portuguese stock market. Second, we focus only on the consequences of a single accounting standard, the overall effect on the quality of financial reporting will be the net consequence of applying many accounting standards. Finally, our sample firms come from listed companies in a single country, and further investigations using listed firms in other countries are warranted.

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