CONTABILIDADE

# IBERIAN MARKETS REACTION TO GOODWILL AND GOODWILL IMPAIRMENTS

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## ABSTRACT

This study aims to analyse in what extent goodwill and goodwill impairment losses are relevant to the market value of Iberian listed companies in the period from 2006 to 2015. The sample includes entities belonging to the PSI-20 index and the IBEX-25 index. Our results indicate that goodwill as a significative and positive relation with market value, but when considering the goodwill impairment, the analysis does not allow us to establish a relationship with market value. When activity sectors are considered, the industries Basic Materials and Utilities present a high relationship between market value and goodwill but regarding the relation between goodwill impairment and market value our results are inconclusive.

## KEY WORDS

Goodwill, Goodwill impairments, IFRS

## 1. INTRODUCTION

Corresponding the goodwill to future economic benefits resulting from assets that are not capable of being individually identified and separately recognized, under the terms of the Portuguese NCRF 14 – Business Combinations and IFRS 3 – Business Combinations, several are the empirical studies that focus the attention on the goodwill accounting treatment and its consequent impact on the economic and financial information disclosed by listed and unlisted companies. One of the most focused aspects is not only the impact of goodwill but also is impairment losses, particularly during the period on which it was not necessarily amortized: from 2005 to 2015.

The use of International Accounting Standards – IAS and International Financial Reporting Standards – IFRS in the European Union has become mandatory in 2005 for all companies with securities admitted to listing on the stock exchange market. IFRS 3 – Business Combinations introduced the elimination of goodwill

amortizations and established procedures for conducting impairment tests. This position was criticized and was widely debated among those that defended the impairment testing and those that defended the systematic amortization of goodwill, arguing the last group that managers would face strong resistance to impairment testing, leading to poor expression of impairment losses and the indefinite maintenance of the value of goodwill as company's intangible asset. Several studies suggest that this is in part induce by the management tendency to avoid recognition of impairment losses (Ramanna & Watts, 2012; Filip, Jeanjean, & Paugam, 2015; Stenheim & Madsen, 2016; Li & Sloan, 2017; Ayres, Campbell, Chyz, & Shipman, 2018).

However, this mandatory impairment test (and non-amortization) was changed in 2016, with goodwill being measured at cost less accumulated amortization, less accumulated impairment losses, according to Portuguese revised NCRF 14. Then, same questions arise: what as the impact of the recognition of impairment losses on investors decisions? Was goodwill and its impairment losses relevant to the definition of the companies' market value per share?

In fact, in the 1980s and 1990s, studies such as Elliott & Shaw (1988) and Francis, Douglas, & Vincent (1996) concluded that markets did not have any kind of reaction to goodwill impairment loses. The results of Souza & Borba (2017), in a study for Brazilian companies, suggest that the recognition of goodwill no statistical significance explaining stock price behaviour, but the results present by Lev & Sougiannis (1996), Oswald & Zarowin (2007), Dahmash, Durand & Watson (2009), Oliveira, Rodriguesa, & Craig (2010), AbuGhazaleh, Hares, & Haddad (2012), Xu, Anandarajan, & Curatota (2011), Qureshi & Ashraf (2013), Gonçalves & Fernandes (2014) and Bilal & Abdenacer (2016) point out that identifiable intangible assets and goodwill contribute positively to the stock price.

For the UK listed companies, from 2005 to 2013, Bilal & Abdenacer (2016) empirical results indicate that intangible assets explain a part of market values variability. Nevertheless, when the analyse is perform on the intangible assets components, results suggest that only intangible assets are value relevant, they affect positively the market values of UK companies, unlike goodwill and, amortization and impairment charges of intangibles, which are not value relevant.

Regarding the goodwill impairments, Lapointe-Antunes, Cormier, & Magnan (2009), analysing companies listed on the Toronto stock exchange, conclude that there is a symmetrical relationship between the stock market price and the goodwill impairments, being the goodwill impairment losses an excellent measure to the reduce of the stock price. Feuilloley & Sentis (2007) studied the French market and found that the deterioration of goodwill has a negative impact on the financial markets.

Fernandes & Gonçalves (2014), in a study for Portuguese listed companies, assess the extent in which goodwill losses affect market prices. The authors state that in PSI 20 company's goodwill losses have an inverse influence on market value per share when compared to companies that are not present in this index, and there is a greater market reaction in terms of goodwill results in generating future economic benefits in companies that are present in the index. However, Hamberg & Beisland (2014) and Vallius (2014), in studies for Sweden and Finland, respectively, conclude that there is no relationship between the value of goodwill and the market value per share. Fernandes & Gonçalves (2014) also conclude that factors associated with the specific risk of each sector are relevant in assessing the explanatory power of goodwill and its impairment losses.

Fernandes, Gonçalves, Guerreiro, & Pereira (2016) study the recognition of impairment losses for intangible assets as well as their relevance to investors in companies listed on the Lisbon and Madrid stock exchanges, for the period 2007 to 2011. Significant differences were found in the recognition of impairment losses between Portugal and Spain and a there was a significant negative relationship between the impairment losses and the market value per share for the analysed entities.

In light of the divergence of views, the main purpose of this article is to analyse to what extent goodwill and its respective impairment losses are relevant to the definition of the market value per share of listed companies for the full period in which goodwill was not necessarily subject to amortization. The sample used includes observations regarding entities belonging to the PSI-20 index and the IBEX-25 index, aiming not only to analyse the relation of goodwill and impairment losses to market prices but also to examine whether the market reacts according to the sector of activity in which the different entities are part of it.

## 2. METHODOLOGY

With the purpose of verifying the importance of the goodwill for the definition of the market value per share, having as reference both the component entities of the PSI-20 and the component entities of the IBEX-35, we chose to address two mail issues: the market reaction to goodwill and the market reaction to goodwill impairment losses. The following hypotheses were defined:

H1: Market reacts to the intangible assets value present in companies' financial statements.

H1a: Market reacts to the goodwill value present in companies' financial statements.

H1b: Market reacts to the goodwill and intangible assets per share except goodwill value present in companies' financial statements.

H2: Market reacts to the goodwill value and impairment losses present in companies' financial statements.

H1a: Market reacts to the goodwill value and impairment losses present in companies' financial statements.

H1b: Market reacts to the goodwill, goodwill impairment losses and intangible assets per share except goodwill value present in companies' financial statements.

H3: Market reaction to the goodwill value present in companies' financial statements depends on the company activity sector.

H4: Market reaction to the goodwill impairment loss present in companies' financial statements depends on the company activity sector.

In order to gather evidence if the market reacts to the goodwill value and impairment losses present in companies' financial statements, the hypothesis analysis was carried out through the approach of Ohlson (1995), seeking to establish the relationship between the market value per share and different accounting variables. The base model is defined as:

$$\text{cot\_31\_marco}_{it+1} = \beta_0 + \beta_1 \text{ cap\_prop\_a}_{it} + \beta_2 \text{ roe\_resliq}_{it} + \varepsilon_{it} \qquad (1)$$

Where:

$\text{cot\_31\_marco}_{it+1}$ – variable that represents the market value per share for company i at the end of the first three months of year t+1;

$\text{cap\_prop\_a}_{it}$ – represents the Equity value per share for company i at the end of year t – is expecting a positive signal for this variable, that is, it should positively affect the market value per share;

$\text{roe\_resliq}_{it}$ – return on equity calculated based on the net profit of company i at the end of year t – this variable is expected to positively affect market value per share;

$\varepsilon_{it}$ is the part of market values that is not interpreted by traditional accounting measures.

In order to test the hypotheses, expanded versions of the base model were used incorporating the following independent variables:

gw_a$_{it}$ – goodwill per share of company i at the end of year t – expecting a positive signal for this variable;

aint_exgw_a$_{it}$ – value of intangible assets per share except goodwill of company i at the end of year t – a positive sign is also expected;

imp_ano_a$_{it}$ – annual impairment of goodwill per share for company i at the end of year t – expected to negatively influence market value per share;

sec0k_gwa$_i$ – represents the intersection of sector k with the variable gw_a, with k = 1, 2, …, l0;

sec0k_impaa – represents the intersection of sector k with the variable imp_ano_a, with k = 1, 2, …, l0.

## 3. DATA AND RESULTS

The sample in this investigation consists of 45 entities, 17 entities belonging to the PSI-20 index and 28 components of the IBEX-35 index, for the period from 2006 to 2015, in order to comprise the period after IFRS become mandatory in 2005 in the European Union for all companies with securities admitted to listing on the stock exchange market imposing impairment tests, until 2015 the last year before the revise accounting standard with goodwill being measured at cost less accumulated amortization, less accumulated impairment losses. All data collected for this investigation were obtained through the database SABI and the missing elements were obtained directly from the reports and accounts of the entities in question. It should be noted that we exclude all banking entities, due to the specificity of the accounting regulations adopted by these entities.

The dependent variable is the market value per share for company i at the end of the third month of the following year (t+1). The main independent variables represent equity value per share, return on equity, goodwill per share, intangible assets per share except goodwill and annual impairment of goodwill per share. Seeking to determine if the activity sector is relevant in the market reactions to goodwill and goodwill impairment losses, the sample was also grouped by activity sectors. The analysed entities were grouped according to the ICB Sectorial Classification – Industry, corresponding to the following sectors in table 1:

Tabel 1

*ICB Sectorial Classification*

| ICB Sectorial Classification | | Assigned variable | Relative Weight |
|---|---|---|---|
| 1000 | Basic Materials | sec01 | 8,9% |
| 2000 | Industrials | sec02 | 15,6% |
| 3000 | Consumer Goods | sec03 | 6,7% |
| 4000 | Health Care | sec04 | 2,2% |
| 5000 | Consumer Services | sec05 | 20,0% |
| 6000 | Telecommunications | sec06 | 2,2% |
| 7000 | Utilities | sec07 | 13,3% |
| 8000 | Financials | sec08 | 6,7% |
| 9000 | Technology | sec09 | 11,1% |
| 0001 | Oil and Gas | sec10 | 13,3% |

Elaborated by the authors.

Table 2 presents the descriptive statistics for the variables used in the regression analysis of the relevance of goodwill and goodwill impairment losses in the firms' market value. The table shows an average share price of 14,829€, with a minimum of 0,134€ and a maximum of 169,65€. The return on equity presents a mean value of 0,144€, with a minimum of -3,055€ due to the fact that some entities present negative results during the period analysed and a maximum of 1,467€. The mean goodwill per share is 2,164€ and the average goodwill impairment per share is 0,068€. We also note average book value per share of 8,452€, inferior than the average share price, with a minimum of 0,006€ and a maximum of 112,758€.

Table 2

*Descriptive statistics*

| Variable | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|
| cot_31_marco | 14,82885 | 20,10055 | 0,134 | 169,65 |
| cap_prop_a | 8,451882 | 15,9193 | 0,0064226 | 112,7577 |
| roe_resliq | 0,1441755 | 0,3081219 | -3,05513 | 1,46724 |
| gw_a | 2,164321 | 6,306028 | 0 | 91,14116 |
| imp_ano_a | 0,0676257 | 0,8568384 | 0 | 16,58647 |
| aint_exgw_a | 2,011927 | 4,409479 | 0 | 63,74418 |

Elaborated by the authors.

Table 3 provides the correlation matrix, which summarizes the nature and the level of different associations between variables. All variables have positive correlations with market value per share, being the most significant positive correlations the ones of equity value per share, goodwill per share and intangible assets per share except goodwill, reinforcing the conclusions of previous studies of a strong correlation between market value per share and the value of intangible assets, including goodwill, present in companies' financial statements.

Table 3

*Pearson correlations*

| | cot_31_marco | cap_prop_a | roe_resliq | gw_a | imp_ano_a | aint_exgw_a |
|---|---|---|---|---|---|---|
| cot_31_marco | 1.0000 | | | | | |
| cap_prop_a | 0.6991 | 1.0000 | | | | |
| roe_resliq | 0.0887 | -0.0558 | 1.0000 | | | |
| gw_a | 0.5335 | 0.6839 | -0.0156 | 1.0000 | | |
| imp_ano_a | 0.1328 | 0.2023 | -0.1387 | 0.0155 | 1.0000 | |
| aint_exgw_a | 0.5342 | 0.5526 | 0.0246 | 0.6668 | 0.1092 | 1.0000 |

Elaborated by the authors.

Aiming to examine the relation between the market value per share and the selected dependent variables, different models were tested, by estimating six regressions representing hypotheses H1a, H1b, H2a, H2b, H3 and H4. Our main dependent variable is market value per share ($cot\_31\_marco_{it+1}$) and we start by estimating the following model based in H1a, including goodwill per share:

$$cot\_31\_marco_{it+1} = \beta_0 + \beta_1 \, cap\_prop\_a_{it} + \beta_2 \, roe\_resliq_{it} + \beta_3 \, gw\_a_{it} + \varepsilon_{it} \qquad (2)$$

The model base in H1b hypnotise, including goodwill per share and intangible asset except goodwill per share, is represented by:

$$cot\_31\_marco_{it+1} = \beta 0 + \beta 1\ cap\_prop\_a_{it} + \beta 2\ roe\_resliq_{it} + \beta 3\ gw\_a_{it} + \beta 4\ aint\_exgw\_a_{it} + \varepsilon_{it} \quad (3)$$

In hypothesis H2a, the following question arises: what is the importance attributed to goodwill impairment? Previous studies suggest that goodwill impairment losses have a negative impact on financial markets (Fernandes, et al, 2016). To test this hypothesis, we estimate the following equation:

$$cot\_31\_marco_{it+1} = \beta 0 + \beta 1\ cap\_prop\_a_{it} + \beta 2\ roe\_resliq_{it} + \beta 3\ gw\_a_{it} + \beta 4\ imp\_ano\_a_{it} + \varepsilon_{it} \quad (4)$$

We also tested the relation of goodwill impairment loss with the market value per share including in the model the variable representing the intangible asset except goodwill per share in addition to the previous variables, testing the H2b hypothesis:

$$cot\_31\_marco_{it+1} = \beta_0 + \beta_1\ cap\_prop\_a_{it} + \beta_2\ roe\_resliq_{it} + \beta_3\ gw\_a_{it} + \beta_4\ imp\_ano\_a_{it} + \beta_5\ aint\_exgw\_a_{it} + \varepsilon_{it}$$
$$(5)$$

The results for the first and second hypothesis are summarized in table 4.

Table 4

*Estimation results – Hypothesis H1 and H2*

| cot_31_marco | H1a | H1b | H2a | H2b |
|---|---|---|---|---|
| cap_prop_a | 0.0686765 | 0.1308837 | 0.0764302 | 0.1353366 |
| | (0.500) | (0.181) | (0.458) | (0.172) |
| roe_resliq | 7.78157 | 7.572604 | 7.843911 | 7.609775 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| gw_a | 0.8272867 | 0.4080324 | 0.8349621 | 0.4133688 |
| | (0.000) | (0.001) | (0.000) | (0.001 |
| _cons | 11.33597 | 9.541528 | 11.22504 | 9.479568 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| aint_exgw_a | | 1.096564 | | 1.094446 |
| | | (0.000) | | (0.000) |
| imp_ano_a | | | 0.2927478 | 0.172658 |
| | | | (0.617) | (0.758) |

Elaborated by the authors.

The results for the specification H1a, lead us to conclude that the model is significant with an $R^2$ of 34,25%. As we anticipated, the variables return on equity and goodwill per share are associated with market value per share, and the association is significant (p=0.0000) for return on equity and goodwill per share. However, the variable representing equity value per share it's not significant. The variable representing the goodwill per share (gw_a) is positive and significant (p<0.000), providing evidence consistent with prior research (Oliveira et al., 2010; AbuGhazaleh et al., 2012; Qureshi & Ashraf, 2013; Gonçalves & Fernandes, 2014) and suggesting that goodwill is relevant for the market price per share.

For the specification H1b, the model is significant with an $R^2$ of 42,29%. The prior variables return on equity and goodwill per share maintain their significant association with market value per share. The new variable representing intangible asset except goodwill per share (aint_exgw_a) is positive and significant which indicates that investors consider important not only to goodwill but to the global value of intangible assets, as

also suggested Oliveira et al. (2010), Qureshi & Ashraf (2013), Gonçalves & Fernandes (2014) and Bilal & Abdenacer (2016).

In H2 specifications, the model is significant with an $R^2$ of 35,39% and $R^2$ of 42,68% for H2a and H2b, respectively. However, while the prior variables in H2a (return on equity and goodwill per share) and in H2b (return on equity, goodwill per share and intangible asset except goodwill per share) maintain their significant association with market value per share and present the expected positive coefficients, the variable representing annual impairment of goodwill per share (imp_ano_a) is non-significant, contrary to what would be expected according to AbuGhazaleh et al. (2012) and Fernandes, et al. (2016).

However, some authors suggest that markets can have different reactions depending on companies the activity sector. Fernandes & Gonçalves (2014) in a study for Portuguese listed companies, from 2005 to 2011, concluded that there are differences in the explanatory power of goodwill and of goodwill impairment losses associated with the specific risk of each sector.

In order to assess if the market reacts in different ways according to the activity sector in which the entities are integrated, we test the hypothesis H3 and H4, considering the ten previous classifications presented in table 1.

Table 5

*Estimation results – Hypothesis H3 and H4*

| cot_31_marco | **H3** | cot_31_marco | **H4** |
|---|---|---|---|
| cap_prop_a | -0.0089654 | cap_prop_a | .1514132 |
| | (0.925) | | (0.152) |
| roe_resliq | 3.12225 | roe_resliq | 9.10496 |
| | (0.066) | | (0.000) |
| sector 1 | 7.941762 | gw_a | .8087939 |
| | (0.000) | | (0.000) |
| sector 2 | 0.796715 | sector 1 | -7.221685 |
| | (0.000) | | (0.002) |
| sector 3 | 0.091232 | sector 2 | 0.869031 |
| | (0.147) | | (0.001) |
| sector 4 | 1.950024 | sector 3 | -42.521705 |
| | (0.000) | | (0.851) |
| sector 5 | 2.735072 | sector 4 | -140.65399 |
| | (0.062) | | (0.670) |
| sector 6 | 0.935882 | sector 5 | 11.869525 |
| | (0.117) | | (0.819) |
| sector 7 | 1.163109 | sector 6 | -71.367085 |
| | 0.010 | | (0.813) |
| sector 8 | -1.059447 | sector 7 | -14.712929 |
| | (0.368) | | (0.918) |
| sector 9 | -2.826368 | sector 8 | -1.257108 |
| | (0.000) | | (0.728) |
| sector 10 | 1.412705 | sector 9 | 29.053505 |
| | (0.053) | | (0.041) |
| _cons | 0.000 | sector 10 | 10.643495 |

| | (0.000) | | (0.879) |
| | | _cons | 10.53165 |
| | | | (0.000) |

<div align="right">Elaborated by the authors.</div>

The results presented in table 5, indicate a significant and positive relationship between the market value per share and the goodwill per share in the sectors associated to Basic Materials, Industrials, Health Care and Utilities. However, in Technology sector we find a significant relationship but the signal is contrary to expected. Fernandes & Gonçalves (2014) found a significant relationship between market value per share and goodwill per share in the Technology, Utilities and Finance, but in the last two sectors, Utilities and Financial, the relation also was contrary to the expected.

Regarding the annual impairment of goodwill per share, we find a significant and negative relationship with the market value per share only in Basic Materials sector. Industrials and Technology present significant relationships with market value per share but with a positive sign, contrary to expected.

## 4. CONCLUSION

This study aims to analyse in what extent goodwill and goodwill impairment losses are relevant to the market value of Iberian listed companies in the period from 2006 to 2015, almost the full period in which goodwill was not necessarily subject to amortization. The sample includes entities belonging to the PSI-20 index and the IBEX-25 index. The results confirm the findings of Oliveira et al., (2010) and Gonçalves & Fernandes, (2014), among others, that goodwill as significative and has positive relation with market value per share. A significative and positive relation was also found for the intangible asset except goodwill, which indicates that investors consider important not only to goodwill but to the global value of intangible assets. However, when considering annual impairment of goodwill, the analysis does not allow us to establish a relationship with market value.

The empirical analysis by activity sectors shows significate differences among industries. The industries Basic Materials and Utilities present a high relationship between market value and goodwill, while at Consumer Goods and Telecommunications the relationship is not evident. Regarding the relation between annual impairment of goodwill and market value our results are inconclusive. As Stenheim & Madsen (2016) suggest, earnings management and corporate governance mechanisms likely explain the reported goodwill impairment and some subjectivity in reported values.

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