

GOODWILL WRITE-OFF AND STRATEGIC CHANGE

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ABSTRACT

Using the resource-based view of the firm, we investigate the relationship between goodwill write-off and strategic change. We hypothesize that these decisions are simultaneously taken and that the goodwill write-off accounting choice is part of a broader assessment of the corporate strategy. Using a sample of US public firms, we find that the goodwill write-off is simultaneous with the firm strategic change operationalized as strategic variation, measured as deviation from the firm prior resources allocation pattern, and as strategic deviation, measured as deviation from the average strategic profile of its competitors in the same industry. To the best of our knowledge this is the first paper to undertake this research. This paper can contribute to the resources-based theory studies, with evidence on how managers assess intangible resources exhaustion and on how managers make decisions, such as switching to alternative or search for new resources. Our paper also contributes to the goodwill accounting literature. Our results support the US Financial Accounting Standard Board's idea that goodwill accounting discloses to the outside the management's private information about the firm future perspectives.

1. Introduction

Mandatory goodwill accounting requires the managers to annually assess the firm intangible resources recognized as goodwill. The exhaustion of the goodwill benefits implies undertaking a goodwill write-off, resulting in lower asset value and loss in the income statement. Accounting standards requires the goodwill write-off be measured basing on the future cash flows estimated in the business plans. Hence, this key financial reporting decision is strictly interconnected with the management's strategy. On the one hand, the

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goodwill annual impairment test is an opportunity for the managers to routinely assess the bundle of intangible resources, referred to as goodwill. The exhaustion of the goodwill benefits may trigger a strategic change to avoid future lower performance and dwindling firm market values. On the other hand, since the goodwill write-off is measured basing on the management's business plans, the management's strategy affects the decision to undertake a write-off.

In this paper, basing on the resource-based theory of the firm, we investigate the relationship between the goodwill write-off and the firm strategic change.

Previous research, before the introduction of the impairment test, suggest that the amortization period of goodwill may be predictive of the success of an acquisition in terms of both earnings changes and future stock prices, conveying to investors information on managements expectations deriving from the combination synergies, eventually signalling the firm's strategies (Henning and Shaw, 2003). Nonetheless, to the best of our knowledge, there is no prior study investigating whether the managers engage in strategic changes as a response to the loss of value in the firm goodwill. Or whether the strategic change leads the management to accurately review the value of the goodwill for ensuing impairments. We attempt to fill this research gap in both the management and accounting literature.

To examine the relationship between goodwill write-off and strategic change we use a panel of 10.321 firm-year observations of US firms in the period 2003-2007. Our sample companies apply the US generally accepted accounting principles (GAAP). We operationalize strategic change as strategic variation, measured as deviation from the firm prior resources allocation pattern, and as strategic deviation, measured as deviation from the average strategic profile of its competitors in the same industry.

The expected correlation between the explanatory variables to the disturbance terms motivates the treatment of strategic variation and strategic deviation as endogenous. To obtain unbiased and consistent parameters estimation, we use a simultaneous equation panel data model using the estimator proposed by Baltagi (EC2SLS). The US GDP growth and Standard & Poor US Global Equity Index are used as instruments.

Our empirical results show that goodwill write-off and strategic variation are simultaneous. Both may be driven by firm-specific events (i.e. external shocks such as disasters, post-acquisition inefficiencies instead of synergies). These events cause immediate reactions at both a strategic and a financial reporting level. Our empirical results also show that the firm strategic deviation from the competitors' profile is undertaken either in the same year of the goodwill write-off or in the prior year. This finding may suggest that such decisions are driven by industry-related events (i.e. changes in the consumer preferences, technological obsolescence of the products). In this case, managers are likely to carefully assess the write-off financial reporting implications. Managers may prefer disclosing a goodwill write-off along with already undertaken new strategic actions to display preparedness.

This paper can contribute to the resources-based theory studies. Firstly, we provide evidence on how managers assess resources shortage and on how managers make decisions, such as switching to alternative or search for new resources. Namely, managers use the mandatory goodwill annual impairment test to assess their set of intangible resources. Secondly, we provide evidence on the methods used: managers use the DCF methods to assess how the goodwill benefits influence the firm performance.

Our paper also contribute to prior management literature, by showing that key accounting decisions, such as the goodwill write-off, can be part of a broader assessment of the corporate investment policy. Included in the corporate policy is the financial reporting policy.

Finally, our paper also contributes to the goodwill accounting literature. The findings highlight that earnings management is not the primary driver of the goodwill write-off, as argued by several studies. By contrast, our results support the US Financial Accounting Standard Board's idea that goodwill accounting discloses to the outside the management's private information about the firm future perspectives.

The remainder of the paper is organized as follows. Section 2 reports the ratio underlying and the requirements mandated by the US GAAP for accounting for goodwill, hinting to the link between accounting for goodwill and the strategy of the firm. Section 3

provides the theoretical background of the study and the hypotheses development. Section 4 defines our research design including the sample selection, the measurements of the variables used to test the hypotheses and the model. In section 5 we display the research results and in section 6 we include the discussions and conclusions.

2. Goodwill accounting under the US accounting standards

Under the US generally accepted accounting principles the goodwill is recognized after a business combination and usually includes intangibles like i.e. customer relationships, market position, employee skills and motivation, firm reputation (Seetharaman et al., 2004). These intangible resources cannot be recognized separately as assets in the financial statements and are thus bundled in a single accounting item. These intangible resources are collectively recognized because they result in future economic benefits. In other words, these resources ensure an extra (or a surplus of) current and future performance.

Each year the goodwill is subject to an impairment test to check for possible losses of value. The check is made between annual tests under certain circumstances, which may be indicator of impaired goodwill. Examples from the SFAS 142 are: a significant adverse change in legal factors or in the business climate; an adverse action or assessment by a regulator; unanticipated competition; a loss of key personnel.

Under the US generally accepted accounting principles, the goodwill is written-off when its current book value is lower than the net present value of the future cash flows obtainable by the firm, according to the management's business plans and forecasts. This can happen for several reasons, e.g. the benefits of prior acquisitions on the firm profitability in the future are depleting, the expected synergies from prior acquisitions are no longer profitable; there are changes in the consumers' behaviour or technological obsolescence of products affecting the business which affect the intangibles recognized in the goodwill. The goodwill write-off accounting warns external parties, such as investors, lenders, and employees, about possible poor future performance and dwindling firm market value.

To the best of our knowledge, there is no prior study investigating the relationship between goodwill write-off and strategic change. We attempt to fill this research gap in the management literature.

3. Theoretical background and hypotheses development

The bundle of intangibles resources recognized as goodwill is a relevant source of competitive advantage of the firm. In the resource-based theory view, the goodwill might be seen as an agglomerate explicative of the strategy and future benefits (or advantages) that the management expects from it. The resource-based theory suggests that firms' value changes in relation to the distinctive resources, competences, know-hows, experiences and other intangibles, which may be all comprised in the concept of goodwill, controlled by the same firms (Barney 1991; Warnerfelt 1984; Barney et al. 2001). Several authors highlight the strategic implications in terms of competitive advantage in the proper exploitation of the intangible resources (Kristandl and Bontis, 2007). Goodwill is a strategic resource given its low imitability, low substitutability, non-tradability (Wade and Hulland, 2004). As a matter of fact, the resource "goodwill" cannot be reproduced nor acquired by other entities because it is made up by an amass of unidentifiable intangible assets, which render it ambiguous and complex, and because it is not separable from the entity as a whole. The origin, life and exhaustion of goodwill are all tied to exclusive conditions, which affect and are affected by the management strategic plan. It originates from a business combination, which is unique and unrepeatable. It is fostered by the efficient coordination of the firms' resources, creating inimitable synergies amongst tangible assets, intangibles and human capital (Reed and DeFillippi, 1990; Sirmon et al., 2007). Finally, the goodwill erodes when the above strategic and positive combination of resources do not persist. As required by SFAS 142 the goodwill is written-off when its current book value is lower than the net present value of the future cash flows obtainable by the firm, according to the management's business plans and forecasts. This can happen for several reasons, e.g. the benefits of prior acquisitions on the firm profitability in the future are depleting, the expected synergies from

prior acquisitions are no longer profitable; there are changes in the consumers' behaviour or technological obsolescence of products affecting the business which wear out the intangibles recognized in the goodwill. The goodwill write-off accounting warns external parties, such as investors, lenders, and employees, about possible poor future performance and dwindling firm market value.

A large body of the literature find evidence that the impairment regime better reflect the underlying attributes of goodwill than the systematic amortization approach (Godfrey and Koh, 2009; Chalmers et al. 2011). Specifically, firms with higher investment opportunities (IOS) reflect the "economic" value of goodwill maintaining high its value, while firms with lower IOS reduces the amount of goodwill through write-offs.

Prior studies also suggest that IOS variation is a potential explanation for differences in corporate policies, including accounting choices (Smith and Watts, 1992; Bradbury et al. 2003). The IOS are largely made up by the real options with values dependent upon future discretionary investments and the firm strategy between others define the firm's portfolio of options (Myers, 1977; 1984). Specifically, Myers (1984) maintains that «strategic planning is many things, but it surely includes the process of deciding how to commit the firm's resources across lines of business». From these words we derive the close interconnections between investment opportunities and the strategic plan of the firm and in line with prior research we suggest that the variation in the firm strategy is reflected in the managerial impairment decision.

To summarize our study follows the following reasoning. According to the resource-based theory perspective, the exhaustion of the goodwill benefits implies undertaking a goodwill write-off, resulting in lower asset value and loss in the income statement. Accounting standards requires the goodwill write-off be measured basing on the future cash flows estimated in the business plans. Hence, this key financial reporting decision is strictly interconnected with the management's strategy. On the one hand, the goodwill annual impairment test is an opportunity for the managers to routinely assess the bundle of intangible resources, referred to as goodwill. The exhaustion of the goodwill benefits may trigger a strategic change to

avoid future lower performance and dwindling firm market values. On the other hand, since the goodwill write-off is measured basing on the management's business plans, the management's strategy affects the decision to undertake a write-off.

We expect a simultaneous relation between impairment of goodwill and the change in the firm strategy. In other words, we assume both that the managers react to the exhaustion of the goodwill benefits undertaking changes in the firm strategy and also that a change in the firm strategy prompts a goodwill impairment.

Hp 1. *Ceteris paribus*, the goodwill write-off is positively associated with the strategic change.

Hp 2. *Ceteris paribus*, the strategic change is positively associated with the goodwill write off.

4. Research methodology

4.1 Sample

To examine the relationship between goodwill write-off and strategic change we use the population of US public firms in the period 2003-2007. We downloaded the data and focused on the firm having goodwill (more than 90% of Compustat population). Our panel is composed of 10.321 firm-year observations (3905 individual firms).

US firms have applied the US SFAS 142 since 2002; however, we omitted the transition year, 2002, as it includes transitory extraordinary write-offs. Also, in that year there was the possibility to disclose the goodwill write-off as extraordinary item in the income statement not affecting the operating performance. This possibility may create significant earnings management incentives, disturbing the interaction between strategic change and goodwill write-off (Beatty and Weber, 2004). After the 2003, the SFAS requires the write-off presented as operating cost. In the period 2003-2007, there is no economic downturn affecting all the firms. The US setting is well suited to this type of research and is not different from that of many other countries. The US GAAP have accounting rules similar to the IAS/IFRS, used in more than 130 Countries worldwide, including e.g.

European Union countries, Brazil, Colombia, South Africa, Taiwan, South Korea, Australia.

4.2 Regression model

We regress the goodwill write-off (on total assets) on two independent variables widely used in prior research to measure strategic change: strategic deviation and strategic deviation (Finkelstein & Hambrick, 1990; Carpenter, 2000; Zhang & Rajagopalan, 2004; Karaevli et al., 2010). By construction, the independent variables incorporate industry and year fixed effects. Hence, we set our panel by observation and year and test whether there are also firm fixed effects. With this empirical research design, we take into account the possibility of multidimensional fixed effects (Gormley and Matsa, 2013). We use a set of standard controls in the goodwill write-off literature (Riedl, 2004).

Model 1

$$\text{GWO} = \text{SV} + \text{SD} + \text{LEV} + \text{MTB} + \text{ROE} + \text{SIZE}$$

Where: GWO= goodwill write-off on total assets; SV= strategic variation; SD = strategic deviation; LEV= leverage, as financial debt on total assets MTB = market-to-book value; ROE= return on equity.

To solve endogeneity, we run a simultaneous equation panel data model using the estimator proposed by Baltagi (EC2SLS). In the first stage we regress SD and SV on the control variables and on two instrumental variables: the US yearly gross-domestic product growth and the Standard&Poors US global equity index. These variables are likely to influence the overall management's strategic thinking, but not specifically the choice to write-off the goodwill.

Models similar to the one used in this study have been already presented in other financial accounting studies. For example, Hossain et al. 2005 examine the effect of the investment opportunity set (IOS) on disclosure using a simultaneous system of equations to take into account the endogenous relationship between the IOS and disclosures.

We run a Hausman test to compare fixed effects and random effects at a firm level. The Hausman test signalled that random effects

are best suitable for our research. As abovementioned, industry fixed effects are incorporated in the strategic change measures.

4.3 Strategic change measurement

We use composite measure of strategic changes. Strategic variation is the variation over time in the firm's pattern of resources allocation. Strategic deviation is the degree to which a firm's strategy deviates from the average strategic profile of its competitors in the same industry.

We used six strategic indicators used by prior research (Carpenter, 2000; Finkelstein and Hambrick, 1990; Karaevli, 2007; Zhang, 2006; Zhang and Rajagopalan, 2004, 2010) to create composite measures of strategic changes. These indicators are advertising intensity (advertising/sales), research and development intensity (R&D/sales), plant and equipment newness (net P&E/gross P&E), non-production overhead (SGA expenses/sales), inventory levels (inventories/sales), and financial leverage (debt/equity). Each indicator focuses on a relevant and specific dimension of a firm's strategic profile, which is potentially controllable by managers (Karaevli et al, 2010).

Treating t as the goodwill write-off year, the i -th firm's four-year (for $t - 1$ through $t + 2$) variance for each strategic dimension was computed. Variance scores for each dimension were standardized by industry. We obtained six standardized variance indicators and we summed them to obtain SV. Treating t as the goodwill write-off year, we follow Karaevli et al., (2010) and define SD as the sum of the absolute values of the industry adjusted strategy indicators averaged over the three year-period, from the succession year (t) through the third year after ($t + 2$). We used the same six indicators used for SV.

5. Empirical findings

Table 1 reports the second stage of our panel regression. The findings show that the strategic variation (SV) has a positive highly significant correlation with the goodwill write-off (GWO). The coefficient is significant at the 1% level. The strategic deviation has a higher coefficient and an even more significant association (p -value < 0.01). These findings support HP1.

Table 1

Dependent variable: GW0
 Number of obs = 10321
 Number of groups = 3905
 Wald chi2(6) = 913.56
 Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
SV	.0249457	.0090969	2.74	0.006	.0071161 .0427753
SD	.0297763	.0081198	3.67	0.000	.0138619 .0456908
SIZE	.0005833	.0013398	0.44	0.663	-.0020426 .0032091
LEV	.0194908	.0027927	6.98	0.000	.0140171 .0249645
MTB	-.0000292	9.56e-06	-3.05	0.002	-.0000479 -.0000104
ROE	-7.04e-07	2.37e-07	-2.97	0.003	-1.17e-06 -2.39e-07
_cons	-.0317416	.0101538	-3.13	0.002	-.0516427 -.0118404

Our empirical results show that goodwill write-off and strategic variation are simultaneous. Both may be driven by firm-specific events, which cause reactions at both a strategic and a financial reporting level by managers. Examples of such events are post-acquisition inefficiencies instead of synergies or external shocks such as environmental disasters.

Further investigations, also show that the firm strategic deviation from the competitors' profile is undertaken either in the same year of the goodwill write-off or in the prior year. This finding may suggest that such decisions are driven by industry-related events, such as changes in the consumer preferences or technological obsolescence of the products. In this case, managers could delay the write-off reporting it along with already undertaken new strategic actions to display preparedness. An alternative explanation is that it takes more time to measure the impact of long-term changes on the goodwill value and on the firm prospective performance.

6. Discussion and conclusion

Our empirical findings demonstrate that goodwill write-offs and strategic change are simultaneously determined. As predicted, goodwill write-off is positively associated with the firm's strategic change and vice versa.

Our paper can contribute to the resources-based theory studies. The goodwill write-off may provide a tool for the managers to assess intangible resources exhaustion and shortage. Managers may use the goodwill write-off procedure as a basis for undertaking decisions to switch to other resources. Managers use the DCF methods to assess how the goodwill benefits influence the firm performance; if the extra performance lowers or disappear then the intangible resources bundled in the goodwill lose value.

Our paper also contribute to prior management literature, by showing that key accounting decisions, such as the goodwill write-off, can be part of a broader assessment of the corporate investment policy. Included in the corporate policy is the accounting and financial reporting policy.

Finally, our paper also contributes to the goodwill accounting literature. The findings support the US Financial Accounting Standard Board's idea that goodwill accounting discloses to the outside the management's private information about the firm future perspectives and is not used for earnings management.

Our study acknowledges some limitations. In our paper, we do not control for earnings management incentives. However, the goodwill write-off accrual cannot be reversed unlike other accruals (i.e. working capital). Hence managers are likely to prefer other accruals to manage the current earnings.

Future research could investigate whether the CEO change or the CEO background moderate and influence the relationship between goodwill write-off and strategic change.

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