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## **ANALYSIS OF THE IMPACT OF GOODWILL IMPAIRMENT INFORMATION ON CORPORATE VALUE**

### **Abstract:**

Arguments about goodwill accounting arising from business combinations became increasingly active since FASB and IASB changed goodwill accounting from "amortization and impairment" to "impairment-only". On the other hand, as a general rule, the Japan Generally Accepted Accounting Principles (JGAAP) applies amortization from a period of up to 20 years using the straight line method. This is a major cause of the financial results of the JGAAP differing from international accounting standards and this issue has been a topic of great interest in the business world.

Although Accounting Standards Board of Japan (ASBJ) was considering goodwill accounting, they decided to continue to use the amortization method because many investigations and reviews began to point out problems of the approach. In 2014, ASBJ published a discussion paper with European Financial Reporting Advisory Group (EFRAG) and Organismo Italiano di Contabilità (OIC) and suggested a reintroduction of the amortization method.

Problems with "impairment-only" accounting include accounting methods and disclosure methods, but the usefulness of disclosed information is a particularly important issue. In this study, we investigate the usefulness of goodwill impairment information in regard to these problems. Specifically, its impact has been analyzed by using the method of event study based on the type of information and industry.

News about goodwill impairment varies, and in some cases different information is reported in the same article. Therefore, we divided the information into three types. The first is the news where goodwill impairment information of goodwill was reported alone, the second where information reported in the same article is good news, and the third is bad news.

Results of analysis of all samples confirmed that the negative impact of goodwill impairment news on stock price lasts at least 5 business days, namely one week. Concerning results of analysis based on the type of the information, the impact was the strongest and lasted the longest in the case of bad news. Finally, results of analysis divided into manufacturing and non-manufacturing confirmed the information impact in both industries, and the impact of manufacturing is stronger and lasts longer. These results showed that goodwill impairment information has a negative impact on corporate value in Japan.

### **Keywords:**

goodwill accounting, impairment, amortization

**JEL Classification:** M00, M41

## Introduction

Arguments about goodwill accounting arising from business combinations became increasingly active since Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) changed goodwill accounting from "amortization and impairment" to "impairment-only". On the other hand, as a general rule, the Japan Generally Accepted Accounting Principles (JGAAP) applies amortization from a period of up to 20 years using the straight line method. This is a major cause of the financial results of the JGAAP differing from international accounting standards and this issue has been a topic of great interest in the business world.

"Accounting Standards for the Impairment of Fixed Assets" enforced in 2007, require an impairment review of the goodwill. However, it assumes the existence of amortization in a period using the straight line method, and its characteristics differ from the "impairment-only" international accounting standards.

Although Accounting Standards Board of Japan (ASBJ) had continued to consider using goodwill accounting, they decided to continue to use the amortization method because many investigations and reviews began to point out problems of the approach. In 2014, ASBJ published a discussion paper with European Financial Reporting Advisory Group (EFRAG) and Organismo Italiano di Contabilità (OIC) and suggested a reintroduction of the amortization method.

Problems with "impairment-only" accounting include accounting methods and disclosure methods, but the usefulness of disclosed information is a particularly important issue. In this study, we investigate the usefulness of goodwill impairment information in regard to these problems. There are two approaches to investigating the usefulness of the impairment goodwill information. The first is an analysis of the impact that expenses of goodwill impairment has on stock prices. The second is an analysis of the impact that news about goodwill impairment has on stock prices. In this study, we report on the analysis of Japanese companies regarding the latter approach.

## Prior Studies and Research Issues

The experimental studies that have been performed before the new "impairment-only" accounting standard was institutionalized can be divided in two types. The first is the value relevance analysis of depreciation of goodwill using the amortization method. In 2001, FASB announced SFAS142 "Goodwill Impairment" and introduced the impairment-only approach on the grounds that information on depreciation of goodwill using the amortization method is not useful. The results of the following precedent study support this idea.

Moehrle et al. (2001) used samples from all of the firms in the Standard and Poor's (S&P) 1500 for the years from 1988 – 1998 to investigate the usefulness of depreciation of goodwill. They compare adjusted  $R^2$ s from regression of market-adjusted returns on each

measure (IB, CFO and IBAI)<sup>1</sup>. As a result, they found that the relative informativeness of earnings before amortization and earnings before extraordinary items have no statistically significant difference. This result suggests that goodwill amortization disclosures were not useful information.

Jennings et al. (2001) used the same database to collect sample companies for the years from 1993 to 1998. They compare adjusted R<sup>2</sup>s from regression of stock price on the last day of the third month after the end of its fiscal year on each measure (EPSBGW<sub>t</sub> and EPSAGW<sub>t</sub><sup>2</sup>). They concluded that earnings before goodwill amortization explained significantly more of the observed distribution of share price than earnings after goodwill amortization. This result is also suggested that goodwill amortization disclosures are not useful.

The second is analysis about the impact on stock prices by the official announcement of goodwill impairment information. Hirschev and Richardson (2002) performed an event study using data from companies that impairment of goodwill<sup>3</sup> has been reported in Wall Street Journal Index online (*WSJI*) for the fiscal period of 1992 to 1996. They divided the sample into simple information and the information that others announced simultaneously, then, they divided information announced simultaneously into profit information and loss information. They calculated the cumulative abnormal returns of each sample, and observed the movement of around the announcement date of the goodwill impairment information. As a result, they found that goodwill impairment information has a significant negative impact on market prices unless profit information was announced simultaneously. This result suggests that goodwill impairment information is useful.

The above descriptions indicate that the research findings which back up introduction of impairment treatment were mainstream before the New Accounting Standards enforcement.

After new accounting standards were institutionalized, there have been many studies on goodwill impairment treatment and manager's discretionary action, and there is little accumulation of the prior studies on the usefulness of goodwill impairment information.

However, far from a surge of the usefulness of the accounts information by the introduction of new accounting standards, the following precedent studies show contradicting results.

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<sup>1</sup> They examined the following three performance measures:

IB = Net income reported after taxes but before extraordinary items.

CFO = Net cash flow from operations.

IBAI = Income before extraordinary items but after taxes excluding amortization of intangibles.

<sup>2</sup> They examined the following two performance measures:

EPSBGW<sub>t</sub> = Earnings per share from continuing operations before goodwill amortization.

EPSAGW<sub>t</sub> = Earnings per share from continuing operations after goodwill amortization.

<sup>3</sup> They substituted goodwill write off information because goodwill impairment information wasn't available in the study period.

Beatty and Weber (2006) clarified that managers have been using the goodwill impairment rule to engage in opportunistic discretionary behavior after the application of SFAS142. Examples of this are avoiding the accountability of management by calculating impairment loss of goodwill in extraordinary items, and offsetting the future operating income and impairment loss of goodwill in order to avoid the recognition of loss.

Carlin and Finch (2010) investigated the application actual condition of IFRS3 for companies in Australia. IFRS3 defines the unit of impairment tests as the cash generating unit, which is stipulated as a unit smaller than a business segment. They discovered that there was the case that this rule was not observed, because there were fewer of cash generating units than the number of business segments. This finding shows the possibility of avoiding the recognition of impairment loss by setting a high profitability unit and a low profitability unit as one unit. This result also suggests discretionary action by managers.

When SFAS142 was introduced, FASB insisted that “impairment-only” accounting improves the transparency of financial reports, and provides useful information for users of financial statements, if companies observe the rules of impairment processing and disclosure. However, as the above research findings show, the leeway of managers’ discretionary actions increased in regards to goodwill accounting. This suggests that accounting results developed more uncertain elements and we have reached a situation where it is hard to say that accounting information has become more useful.

ASBJ, EFRAG and the OIC carried out a survey to acquire opinions on the problem of carrying out “impairment-only” accounting. As a result, it was revealed that many respondents doubted usefulness of the information from the accounting process. Goodwill impairment accounting processes possess an unavoidable aspect of subjective judgment by the manager, and there is a possibility that impairment losses may not be recorded at an appropriate timing and price. By the time goodwill impairment loss is recorded, the timing of the information is too late, and some think that the stock market will have already incorporated the news into the stock price.

In this study, we analyze influence on the stock price of the goodwill impairment information targeted at Japanese companies, and verify the usefulness of goodwill impairment information that Japanese companies announced.

## **Data and Methodology**

### **Samples and Data**

The analysis period is from April 2005 until the end of March 2014. We collected the news reported about goodwill impairment from articles in Nikkei Newspaper for the companies

listed in the First Section of the Tokyo Stock Exchange (TSE). We chose the article of the earliest date regarding the same news item to ensure the freshness of the news and the independence between events. Among these samples, we ended up with 69 samples that provided stock prices. The stock price data uses adjusted daily closing prices of *Yahoo Finance*.

News about the goodwill impairment varies, and in some cases different information is reported in the same article. Thus, we divided the information into three types. The first is the news where goodwill impairment information of goodwill was reported alone, the second where information reported in the same article is good news, and the third is bad news.

**Table 1: Samples by Industry**

Industry	Number
Construction	1
Fishery	1
Foods	5
Textiles and Apparels	2
Chemicals	5
Pharmaceutical	1
Rubber Products	2
Glass and Ceramics Products	2
Iron and Steel	1
Nonferrous Metals	1
Electric Appliances	9
Precision Instruments	3
Other Products	5
Electric Power and Gas	1
Marine Transportation	1
Information & Communication	9
Wholesale Trade	2
Retail Trade	9
Banks	1
Real Estate	2
Services	7
Total	69

Source: Own adjustment based on Nikkei Newspaper.

Table 1 shows the industry classification of the samples. Since manufacturing shows a high proportion in the sample, we decided to analyze the samples by industry in addition.

## The Analysis Method of the Event Study

### Event Windows

We analyze the impact of goodwill impairment information on stock price formation by using an event study method. Specifying the time when goodwill impairment information was

reported is required to perform an event study. Companies often announce accounting information on their website. The listed companies have the duty to transmit information widely and in a timely manner through the Timely Disclosure Network (TDnet) in accordance with the timely disclosure system, when they deem information to have a serious influence on stock price formation. However, the above-mentioned information is announced after the end of securities trading time in many cases, and not many people access the information. The information that affects stock price formation is reported quickly by the mass media, such as newspapers. From the point of view of impact on the stock market, it is appropriate to set the day when the mass media reports the information as the publication day. In this study, we set the event day as the day when goodwill impairment was reported in a newspaper.

The event window is 31 days, from 15 days before the event to 15 days after. We divided the event window into the announcement window (day 0 to day 1), the earlier window (day -15 to day -1), and the subsequent window (day 2 to day 15). The estimation window is 255 days preceding the event window.

## Analysis Model of the Event Study

We selected the market model and specified the expected return required for calculation of an abnormal return. In this study, we estimated equation (1) parameters by using the daily closing price of the market index and the sample companies.

$$R_{i,t} = \alpha_{i,t} + \beta_{m,t} + \varepsilon_{i,t} \quad (1)$$

Where

$$R_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \quad (2)$$

$$R_{m,t} = \frac{P_{m,t} - P_{m,t-1}}{P_{m,t-1}} \quad (3)$$

$R_{i,t}$  is the change in each stock and  $R_{m,t}$  is the change of market index. We used TOPIX as the market index because our sample is listed companies of TSE.  $P_{i,t}$  is a closing price of stock  $i$ , on the day  $t$  and  $P_{m,t}$  is a closing price of TOPIX on the day  $t$ .

Then, we estimated normal return by extrapolating estimate  $\hat{\alpha}$  and  $\hat{\beta}$  of the parameter that was estimated by Ordinary Least Square Method for each day of the event window.

$$\hat{R}_{i,t} = \hat{\alpha}_i + \hat{\beta}_i R_{m,t} \quad (4)$$

The difference between the actual return to a normal return is Abnormal Return, and we defined it as the impact on the stock price of the event.

$$AR_{i,t} = R_{i,t} - \hat{R}_{i,t} \quad (5)$$

We aggregated AR as daily data and calculated the averages as below, and we defined it as Average Abnormal Return (AAR).

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{i,t} \quad (6)$$

Although it is possible to analyze the impact of the event on stock prices by calculating the AAR, the impact does not necessarily appear only on an event day. Therefore, it is important to also observe movement of cumulated AAR for several days. To analyze the impact for several days around the event, we calculate the Cumulative Average Abnormal Return (CAAR) which cumulated AAR in several days as shown below.

$$CAAR(T_1, T_2) = \sum_{t=T_1}^{T_2} AAR_t \quad (7)$$

We calculated a t-value in reference to Brown and Warner (1985) to judge whether AAR is statistically-significantly different from 0. The t-value of the AAR ( $t_1$ ) is standardized AAR in standard deviation.

$$t_1 = \frac{AAR_t}{\hat{\sigma}} \quad (8)$$

Where

$$\hat{\sigma} = \sqrt{\left( \sum_{t=-300}^{t=-45} AAR_t - AAR \right)^2 / (L-1)} \quad (9)$$

$$AAR = \frac{1}{255} \sum_{t=-300}^{t=-45} AAR_t \quad (10)$$

L is the days estimation window, is 255 in this study.

Then, we calculated t-value of the CAAR ( $t_2$ ) as equation (11).

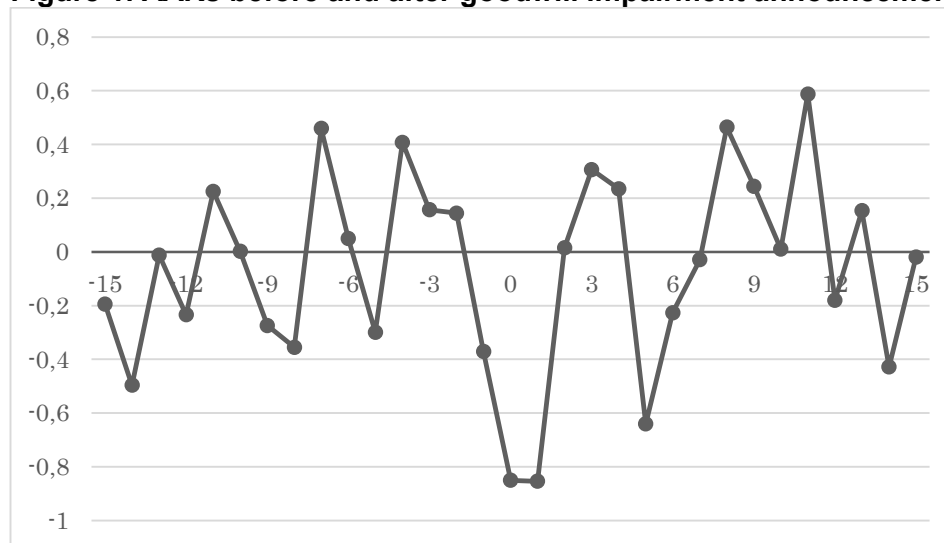
$$t_2 = \sum_{t=T_1}^{T_2} AAR_t / \left( \sum_{t=T_1}^{T_2} \hat{\sigma}^2 \right)^{\frac{1}{2}} \quad (11)$$

## Result

### The Measurement Result of Abnormal Returns

AARs of the whole sample (N=69) are plotted in chronological order in figure 1. Coordinate 0 of the abscissa is the event day (day 0), that is, the day when goodwill impairment was reported. Figure 1 shows that the AARs swing to negative before the goodwill impairment was reported. We clearly confirm negative impact until the next day. Table 2 shows the results of  $AAR_t$  and t-value according to equation (6) and (8). In Table 2, immediately after the goodwill impairment news was reported, the values of the AARs are significant. Thus, we confirm the news affected the stock price.

**Figure 1: AARs before and after goodwill impairment announcement (N=69)**



Source: Own adjustment based on Yahoo Finance data.

**Table 2: AARs and t-value (N=69)**

Time	AAR <sub>t</sub>	t-value
-15	-0.195	-0.686
-14	-0.496	-1.122
-13	-0.012	-0.044
-12	-0.234	-0.725
-11	0.225	0.788
-10	0.002	0.006
-9	-0.274	-1.217
-8	-0.355	-1.332
-7	0.460	1.474
-6	0.050	0.132
-5	-0.299	-0.727
-4	0.408	1.270
-3	0.157	0.493
-2	0.144	0.361
-1	-0.371	-0.823
0	-0.850	-1.797*
1	-0.854	-1.971*
2	0.015	0.054
3	0.306	1.060
4	0.235	0.714
5	-0.640	-2.579**
6	-0.226	-0.791



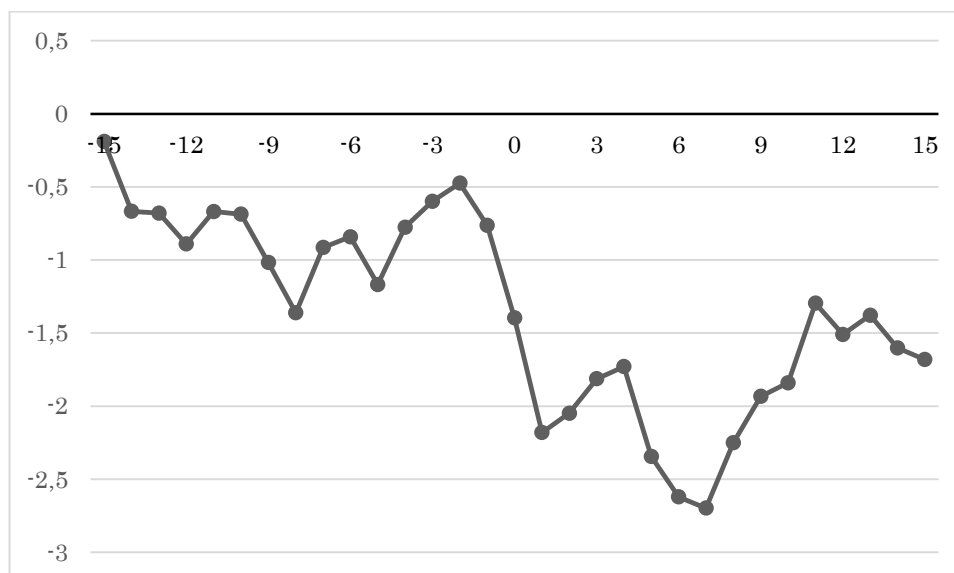
7	-0.029	-0.103
8	0.464	1.584
9	0.245	0.863
10	0.010	0.036
11	0.588	1.798*
12	-0.180	-0.650
13	0.153	0.624
14	-0.429	-1.277
15	-0.019	-0.073

\*, \*\* and \*\*\* denote significance level of 10%, 5% and 1% respectively.

Source: Own adjustment based on *Yahoo Finance data*.

Although the days when the AARs are negative after a report day, except for day 5, it is not statistically significant. Table 2 shows that the news of the goodwill impairment has significant impact on the stock prices as a temporary shock. However, it is not possible to confirm the effect of a continuous shock from observation of AARs. Therefore, by using the CAARs, we evaluate cumulative effects when this effect continued.

**Figure 2: CAARs before and after goodwill impairment announcement (N=69)**



Source: Own adjustment based on *Yahoo Finance data*.

**Table 3: CAARs in specific windows (N=69)**

$\langle T_1, T_2 \rangle$	CAAR( $T_1, T_2$ )	t-value
$\langle -15, +15 \rangle$	-2.002	-1.549
$\langle -5, -1 \rangle$	0.459	0.503
$\langle 0, +1 \rangle$	-1.704	-2.952***
$\langle 0, +5 \rangle$	-1.788	-2.067**
$\langle 0, +10 \rangle$	-1.325	-1.030
$\langle 0, +15 \rangle$	-1.212	-0.914

\*, \*\* and \*\*\* denote significance level of 10%, 5% and 1% respectively.

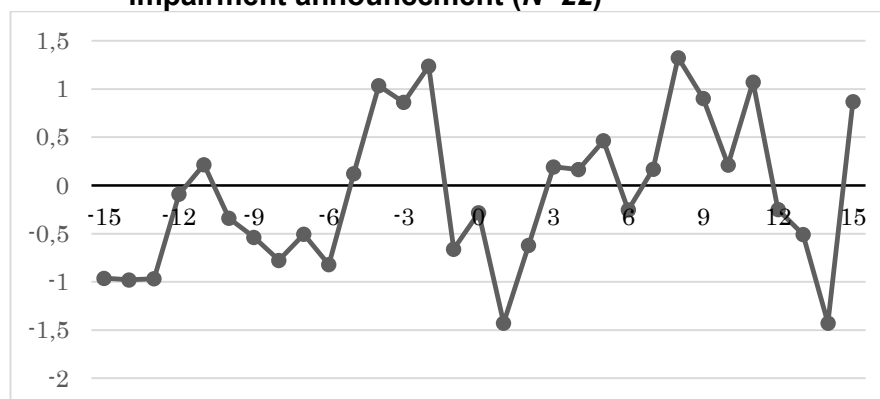
Source: Own adjustment based on *Yahoo Finance data*.

The CAARs in the event windows, plotted in figure 2 and Table 3, shows the CAARs in the specific windows. Figure 2 shows that the CAARs greatly turn to negative from day 0, and the negative value continues as a bottom in day 7. Table 3 shows that cumulative impact from day 0 to day 5 is significant negative value. Thus, we confirm that the news of goodwill impairment has significant negative impact on stock price and the impact lasts at least five business days, namely a week.

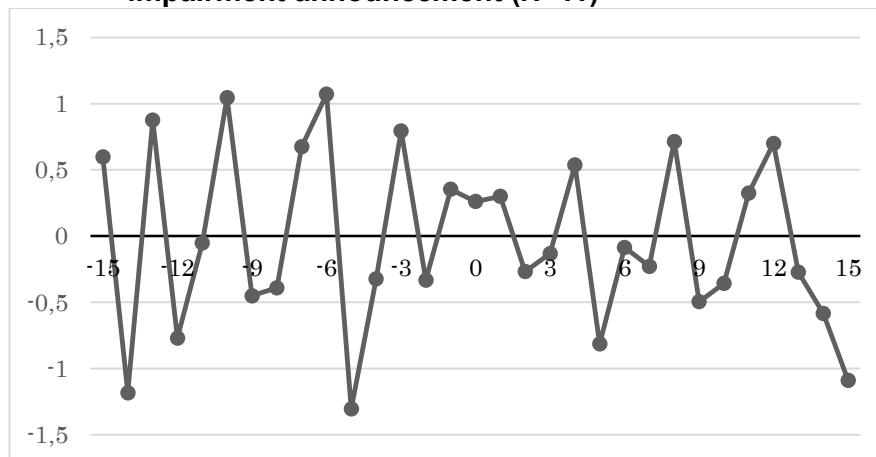
### Analysis Results by Type of Information

Goodwill impairment news is more often reported with other financial information rather than independently because goodwill impairment is a category of corporate performance. Thus, we divided the information into three types. The first is the news where goodwill impairment information was reported alone, and the second where it was reported in an article with good news, and the third with bad news (hereinafter these are called simple information, good news information, and bad news information). Good news is news associated with an improvement in business, for example, an increase in various kinds of profit and income, a decrease in losses, and a shift into profit. In contrast, bad news is news associated with a decline in business, for example, a decrease in various kinds of profit and income, increase in losses, and going in the red. AARs are plotted for the types of information in figure 3, 4, 5.

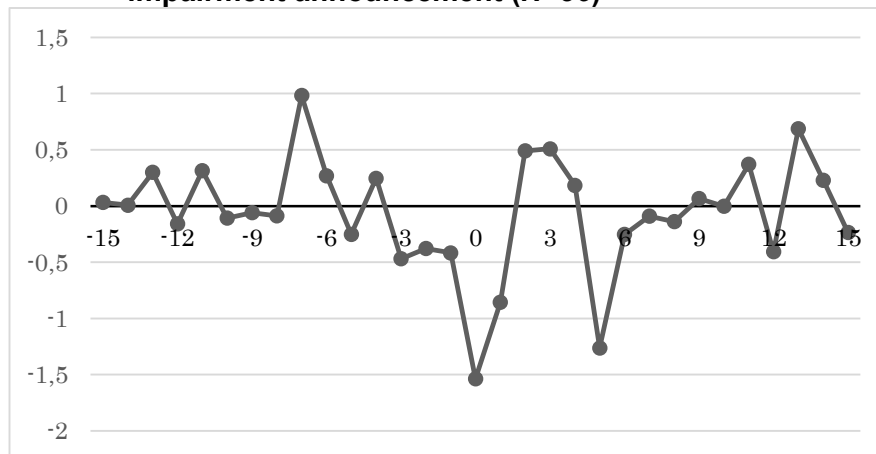
**Figure3: AARs of simple information before and after goodwill impairment announcement (N=22)**



Source: Own adjustment based on Yahoo Finance data.

**Figure 4: AARs of good news information before and after goodwill impairment announcement (N=11)**

Source: Own adjustment based on Yahoo Finance data.

**Figure 5: AARs of bad news information before and after goodwill impairment announcement (N=36)**

Source: Own adjustment based on Yahoo Finance data.

**Table 4: AARs by the type of information and t-value**

Time	Type of information					
	Simple information	t-value	Good news	t-value	Bad news	t-value
-15	-0.961	-1.494	0.597	0.808	0.032	0.111
-14	-0.978	-1.155	-1.183	-1.104	0.008	0.014
-13	-0.967	-1.800	0.876	1.271	0.300	0.958
-12	-0.090	-0.117	-0.769	-0.699	-0.159	-0.637
-11	0.216	0.344	-0.052	-0.154	0.316	0.816
-10	-0.340	-0.503	1.045	0.699	-0.107	-0.440
-9	-0.537	-1.751*	-0.451	-0.631	-0.059	-0.181
-8	-0.776	-1.248	-0.390	-0.517	-0.088	-0.335
-7	-0.505	-0.674	0.675	1.897*	0.984	2.826***
-6	-0.822	-1.151	1.070	0.705	0.270	0.793
-5	0.123	0.141	-1.305	-2.169**	-0.250	-0.453
-4	1.035	1.328	-0.323	-0.592	0.247	0.707
-3	0.861	1.292	0.794	1.018	-0.468	-1.261

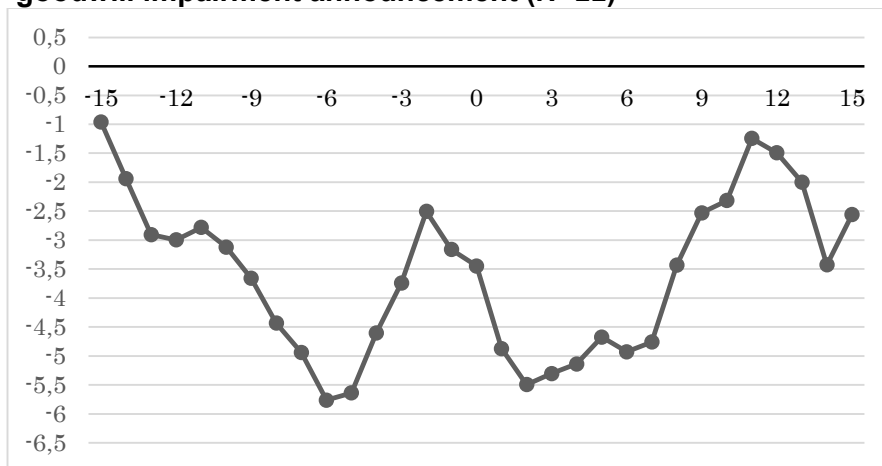
-2	1.238	1.097	-0.332	-0.801	-0.378	-1.310
-1	-0.660	-1.150	0.353	0.664	-0.416	-0.534
0	-0.283	-0.335	0.261	0.285	-1.536	-2.243**
1	-1.427	-1.790*	0.300	0.201	-0.856	-1.700*
2	-0.622	-1.429	-0.267	-0.410	0.491	1.229
3	0.193	0.309	-0.131	-0.257	0.509	1.351
4	0.165	0.228	0.537	0.720	0.185	0.460
5	0.464	1.228	-0.814	-4.262***	-1.262	-3.354***
6	-0.253	-0.389	-0.086	-0.191	-0.252	-0.699
7	0.169	0.413	-0.228	-0.409	-0.090	-0.196
8	1.325	2.465**	0.714	0.684	-0.139	-0.450
9	0.904	1.323	-0.495	-0.848	0.067	0.231
10	0.213	0.310	-0.357	-0.589	-0.002	-0.006
11	1.073	1.263	0.325	0.554	0.371	1.191
12	-0.249	-0.645	0.700	0.858	-0.406	-1.006
13	-0.507	-1.507	-0.273	-0.665	0.687	1.767*
14	-1.426	-1.743*	-0.584	-0.610	0.229	0.904
15	0.868	1.972*	-1.089	-1.239	-0.235	0.230

\*, \*\* and \*\*\* denote significance level of 10%, 5% and 1% respectively.

Source: Own adjustment based on Yahoo Finance data.

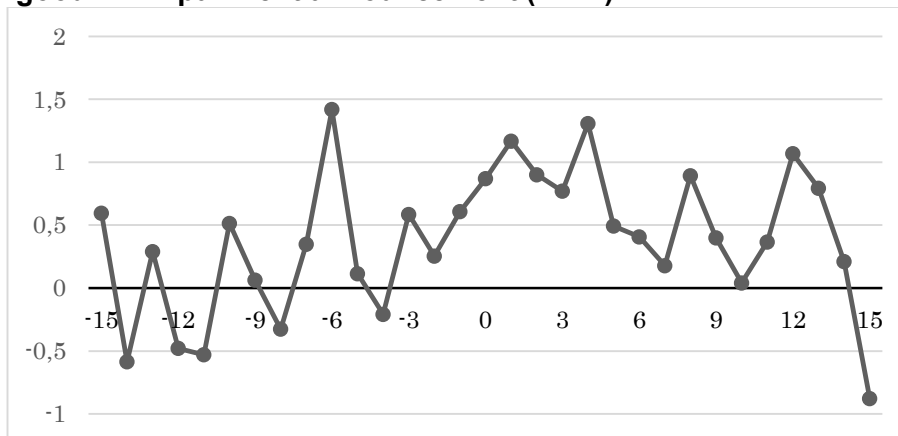
The AARs of simple information are plotted in figure 3. Figure 3 shows that the AARs turn into negative in day 1 and moves in a more negative direction. We confirm the information impact of goodwill impairment news on the stock price because the value of day 1 is statistically significant negative in Table 4. However, there are some significantly negative values in the pre-event window. In regards to the trends of the value in the post-event window, it moves into positive in day 3, and it is significant. Although there are days that turn into negative, they are not significant. Therefore, there is possibility that the market has already deteriorated the evaluation of the company in this case of the simple information. The AARs of good news information are plotted in figure 4. Figure 4 shows positive AARs from day -1 to day 1. This is due to the fact that the adverse impact of goodwill impairment is offset by good news. The AARs of bad news information are plotted in figure 5. Figure 5 shows that the AARs turned to negative strongly in day 0, and it is a negative value until the next day. These values are significant negative. The figure shows that the movement of AARs of bad news information looks more stable than simple information about the same topic. This is possibly because that goodwill impairment news and other negative information generate synergy impact on stock price, and the information impact lasts longer.

**Figure 6: CAARs of simple information before and after goodwill impairment announcement (N=22)**



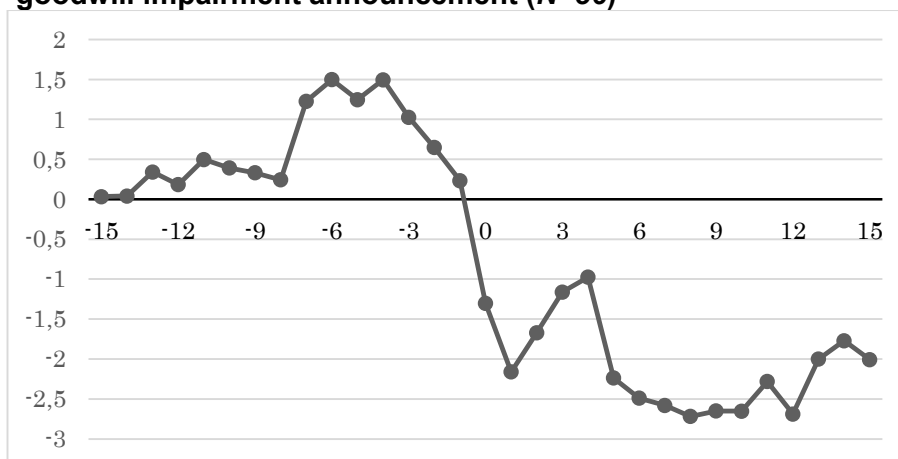
Source: Own adjustment based on *Yahoo Finance data*.

**Figure 7: CAARs of good news information before and after goodwill impairment announcement (N=11)**



Source: Own adjustment based on *Yahoo Finance data*.

**Figure 8: CAARs of bad news information before and after goodwill impairment announcement (N=36)**



Source: Own adjustment based on *Yahoo Finance data*.

**Table 5: CAARs in specific windows**

Type of information	$\langle T_1, T_2 \rangle$					
	$\langle -15, +15 \rangle$	$\langle -5, -1 \rangle$	$\langle 0, +1 \rangle$	$\langle 0, +5 \rangle$	$\langle 0, +10 \rangle$	$\langle 0, +15 \rangle$
Simple information (N=22)	-2.558	2.598	-1.710	-1.512	0.847	0.605
t-value	-1.169	1.024	-1.705*	-0.893	0.262	0.209
Good news (N=11)	-0.878	-0.811	0.561	-0.115	-0.566	-1.486
t-value	-0.242	-0.859	0.329	-0.044	-0.241	-0.537
Bad news (N=36)	-2.006	-1.266	-2.392	-2.469	-2.884	-2.238
t-value	-1.104	-1.122	-3.197***	-2.338**	-2.205**	-1.357

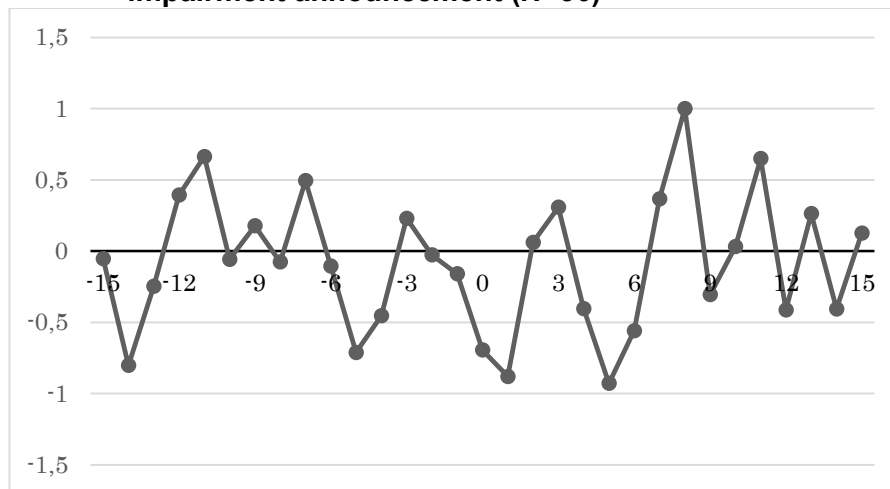
\*, \*\* and \*\*\* denote significance level of 10%, 5% and 1% respectively.

Source: Own adjustment based on Yahoo Finance data.

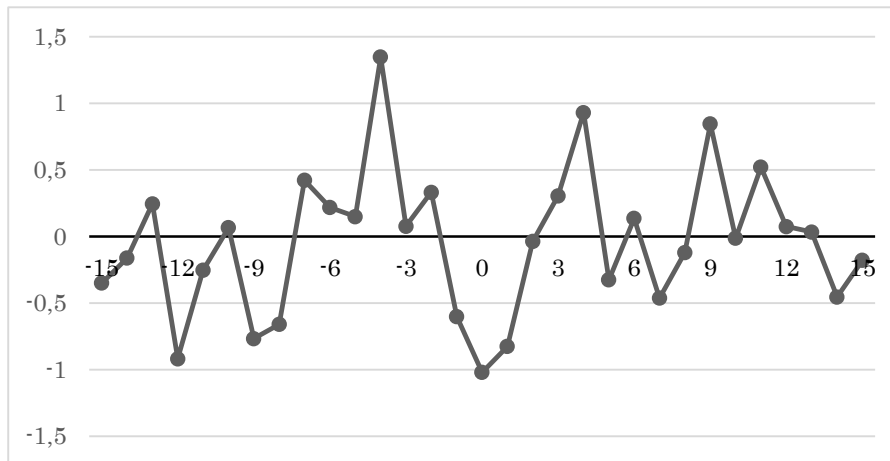
The persistence of the information impact is confirmed from the change of the CAARs. The CAARs of simple information are plotted in figure 6. Figure 6 shows that the CAARs turn negative strongly at day -15 already and undergo a gradual rise from a bottom of day -7. Therefore, there is a possibility that the market incorporates the goodwill impairment news into the stock price before the announcement in the case of the simple information. However, this possibility cannot be confirmed because the CAARs of pre-event window are not significant values. In contrast, temporal information impact of simple information is confirmed because the CAARs are significant negative values in the event window (day 0, day +1). Figure 7 is a change of CAARs of the good news information and shows a positive value in four days around day 0. The value of the CAARs in this sample was not significant at any point in time. Therefore, it is confirmed that the information impact of goodwill impairment is offset by the good news in the case of good news information. The CAARs of bad news information are plotted in figure 8. Figure 8 shows that the CAARs turn into negative strongly at day -1 and it stays at a negative value continuously. The values from day 0 to day 10 in Table 5 are significantly negative. Therefore, in the case of bad news information, it is confirmed that the information impact of goodwill impairment is largest and lasts the longest time.

### Analysis by Industry

The manufacturing industry accounts for about half of the industry distribution of the sample companies. Therefore, we analyzed the information by dividing the samples into manufacturing and non-manufacturing.

**Figure 9: AARs of manufacturing before and after goodwill impairment announcement (N=36)**

Source: Own adjustment based on Yahoo Finance data.

**Figure 10: AARs of non-manufacturing before and after goodwill impairment announcement (N=33)**

Source: Own adjustment based on Yahoo Finance data.

**Table 6: AARs by industry and t-value**

Time	Industry			
	manufacturing	t-value	non-manufacturing	t-value
-15	-0.052	-0.178	-0.350	-0.696
-14	-0.802	-2.355**	-0.162	-0.191
-13	-0.247	-0.669	0.245	0.619
-12	0.394	1.104	-0.919	-1.725*
-11	0.664	1.769*	-0.253	-0.595
-10	-0.057	-0.184	0.066	0.104
-9	0.177	0.616	-0.766	-2.294**
-8	-0.076	-0.278	-0.660	-1.403
-7	0.495	1.301	0.422	0.827
-6	-0.104	-0.259	0.218	0.330
-5	-0.711	-1.636	0.149	0.208

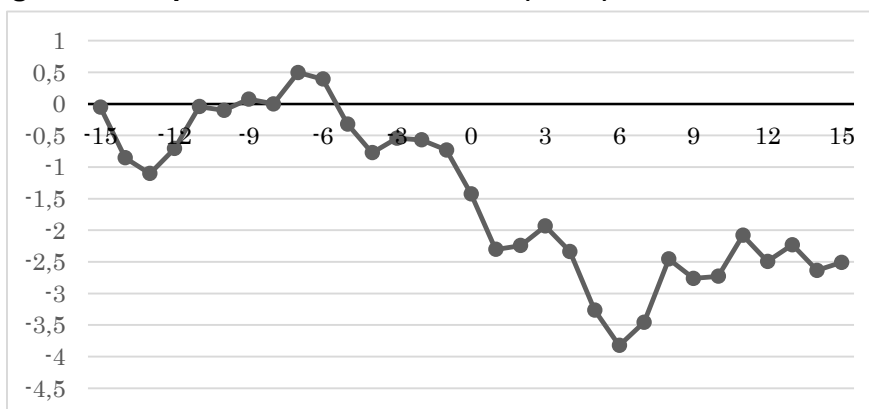
-4	-0.454	-1.458	1.347	2.508**
-3	0.230	0.808	0.077	0.129
-2	-0.027	-0.068	0.332	0.463
-1	-0.159	-0.224	-0.602	-1.104
0	-0.695	-1.152	-1.020	-1.364
1	-0.880	-2.031**	-0.825	-1.057
2	0.062	0.195	-0.037	-0.079
3	0.308	0.648	0.304	0.955
4	-0.403	-1.209	0.930	1.646
5	-0.928	-3.252***	-0.326	-0.789
6	-0.558	-1.575	0.136	0.300
7	0.368	0.841	-0.462	-1.350
8	1.000	2.386**	-0.121	-0.310
9	-0.306	-0.981	0.845	1.805*
10	0.031	0.102	-0.013	-0.028
11	0.649	1.926*	0.521	0.894
12	-0.413	-1.114	0.074	0.180
13	0.263	0.798	0.034	0.091
14	-0.405	-1.375	-0.454	-0.721
15	0.127	0.328	-0.179	-0.492

\*, \*\* and \*\*\* denote significance level of 10%, 5% and 1% respectively.  
 Source: Own adjustment based on Yahoo Finance data.

The AARs of manufacturing are plotted in figure 9. Figure 9 shows that the AARs turns into negative at day -1 and stays negative until day 1. The AAR at day 1 is a significant negative value in Table 6. The adverse information impact appears to be temporal because the AARs turn into positive at day 2. The AARs of non-manufacturing are plotted in figure 10. Figure 10 shows that the AARs turn into negative at day -1 and stays negative until day 1.

Table 6 shows that the AARs from  $T=-1$  to  $T=1$  are not significant values. Therefore, it is possibly that the stock price of manufacturing tends to be impacted by goodwill impairment information.

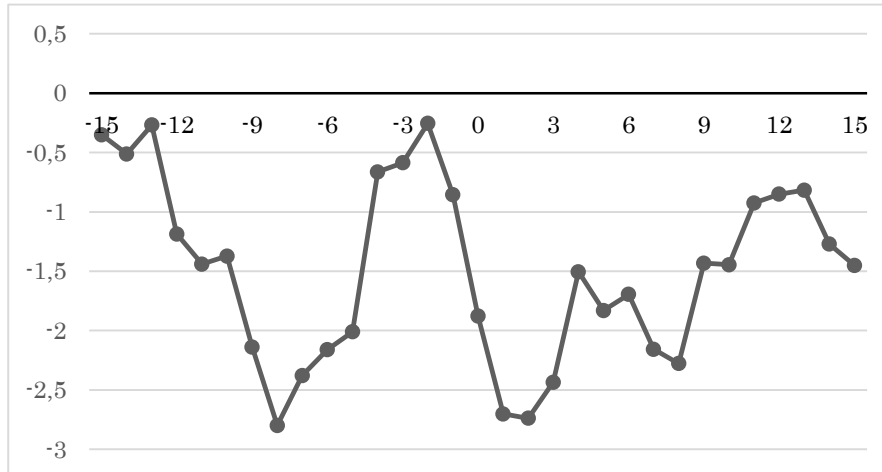
**Figure 11: CAARs of manufacturing before and after goodwill impairment announcement (N=36)**



Source: Own adjustment based on Yahoo Finance data.

**Figure 12: CAARs of non- manufacturing before and after**



**goodwill impairment announcement (N=33)**

Source: Own adjustment based on Yahoo Finance data.

**Table 7: CAARs in specific windows**

industry	$\langle T_1, T_2 \rangle$					
	$\langle -15, +15 \rangle$	$\langle -5, -1 \rangle$	$\langle 0, +1 \rangle$	$\langle 0, +5 \rangle$	$\langle 0, +10 \rangle$	$\langle 0, +15 \rangle$
manufacturing (N=36)	-2.509	-1.121	-1.574	-2.535	-2.000	-1.779
t-value	-1.441	-0.936	-1.898*	-2.395**	-1.482	-1.165
Non-manufacturing (N=33)	-1.450	1.303	-1.845	-0.974	-0.589	-0.594
t-value	-0.745	0.776	-2.275**	-0.697	-0.260	-0.265

\*, \*\* and \*\*\* denote significance level of 10%, 5% and 1% respectively.

Source: Own adjustment based on Yahoo Finance data.

The persistence of the information impact is confirmed from the change of the CAARs. The CAARs of manufacturing are plotted in figure 11. Figure 11 shows that the CAARs turn into negative strongly at day -1 and the negative impact remains after that time. Table 7 shows that the CAARs from day 0 to day 5 are significant negative values. Therefore, it is confirmed that the information impact of goodwill impairment news in manufacturing has a certain continuity. The CAARs of non-manufacturing are plotted in figure 12. Figure 12 shows that the CAARs turn into negative strongly at day -1 but the value moves to positive from day 3. Table 7 shows that the CAARs of non-manufacturing are significantly negative values only in the event window. Therefore, it is confirmed that the information impact of goodwill impairment news is temporal in non-manufacturing.

**Summary and Conclusion**

In this study, the usefulness of goodwill impairment information has been analyzed by evaluating the negative impact on company value of announced information. Specifically, the impact has been analyzed by using the method of event study from the perspective of the type of information and industries.

Results of analysis of all samples confirmed that the negative impact of goodwill impairment news on stock price lasts at least 5 business days, namely one week. In regards to results of analysis based on the type of the information, the impact was the strongest and lasted the longest in the case of bad news. Finally, results of analysis divided into manufacturing and non-manufacturing confirmed the information impact in both industries, and the impact of manufacturing is stronger and lasts longer.

JGAAP applies amortization for a period of up to 20 years using the straight line method and impairment procedures are performed when there are signs of goodwill impairment. Therefore, it is expected that the data of Japanese companies reflect the damage of corporate value more purely than the data of companies in countries adopting the "impairment-only" approach. In addition, we will attempt to analyze the information impact of goodwill impairment news by using data of "impairment-only" countries and make a comparative study. Further research could explore how organizational factors such as organizational culture's impact on the decision-making process for goodwill impairment accounting.

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## Reference

- Accounting Standard Board of Japan: ASBJ (2008). *Accounting Standard for Business Combinations*. ASBJ ( in Japanese).
- Accounting Standard Board of Japan: ASBJ, European Financial Reporting Group: FRAG, Organismo Italiano di Contabilità: OIC (2014). Discussion Paper, *Should goodwill still not be amortised ? Accounting and disclosure for goodwill*. ASBJ, EFRAG, OIC (in Japanese).
- Beatty, A., & Weber, J. (2006). Accounting discretion in fair value estimates: An examination of SFAS 142 goodwill impairments. *Journal of Accounting Research*, 44(2), 257-288.
- Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of financial economics*, 14(1), 3-31.
- Business Accounting Council: BAC (2002). *Accounting Standard for Impairment of Fixed Assets*. BAC ( in Japanese).
- Carlin, T. M., & Finch, N. (2011). Goodwill impairment testing under IFRS: a false impossible shore?. *Pacific Accounting Review*, 23(3), 368-392.
- Docking, D. S., Hirschev, M., & Jones, E. (1997). Information and contagion effects of bank loan-loss reserve announcements. *Journal of Financial Economics*, 43(2), 219-239.
- Financial Accounting Standards Board: FASB (2001). Statement of Financial Accounting Standards No.142, *Goodwill and Other Intangible Assets*. FASB.
- Hirschev, M., & Richardson, V. J. (2002). Information content of accounting goodwill numbers. *Journal of Accounting and Public Policy*, 21(3), 173-191.
- Hirschev, M., & Richardson, V. J. (2003). Investor underreaction to goodwill write-offs. *Financial Analysts Journal*, 59(6), 75-84.

- International Accounting Standard Board: IASB (2008). International Financial Reporting Standard No.3, *Business Combinations*.IASB.
- International Accounting Standards Board: IASB (2010). International Accounting Standard 36, *Impairment of Assets*. IASB.
- Jennings, R., LeClere, M., & Thompson, R. B. (2001). Goodwill amortization and the usefulness of earnings. *Financial Analysts Journal*, 57(5), 20-28.
- Campbell, J. Y., Lo, A. W. C., & MacKinlay, A. C. (1997). *The econometrics of financial markets*. (Vol. 2, 149-180). Princeton, NJ: princeton University press. (Translated in Japanese by Iwaisako, T., Ohashi, K., Nakamura, N., Honda, T. and Wada, K. (2003). *The Econometrics of Financial Markets*. 154-187. Kyoritu Shuppan)
- Moehrl, S. R., Reynolds-Moehrl, J. A., & Wallace, J. S. (2001). How informative are earnings numbers that exclude goodwill amortization?. *Accounting horizons*, 15(3), 243-255.
- Carlin, T. M., & Finch, N. (2010). Evidence on IFRS goodwill impairment testing by Australian and New Zealand firms. *Managerial Finance*, 36(9), 785-798.