

2018 U.S. Goodwill Impairment Study

December 2018

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INTRODUCTION

Duff & Phelps is celebrating its 10-year anniversary edition with the launch of the **2018 U.S. Goodwill Impairment Study** (the “2018 Study”). The 2018 Study examines general and industry goodwill impairment trends of 8,400+ U.S. publicly traded companies through December 2017.

Over the past 10 years, the accounting model for goodwill under U.S. GAAP underwent several significant changes and simplifications. A qualitative test (aka., Step 0) was introduced in 2011, while in 2014, a private company alternative was created, allowing private entities to elect the amortization of goodwill on a straight-line basis over a certain number of years. Most recently, the model was further simplified through the issuance in January 2017 of Accounting Standards Update (ASU) No. 2017-04, *Intangibles — Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*.

ASU 2017-04 eliminated Step 2 of the quantitative two-step test and allowed for early adoption for goodwill impairment tests performed after January 1, 2017. The 2018 Study captures goodwill impairments reported through the end of 2017, which already reflect the impact of early adoption by some U.S. publicly traded companies.



Visit the 2018 U.S. Goodwill Impairment Study Online

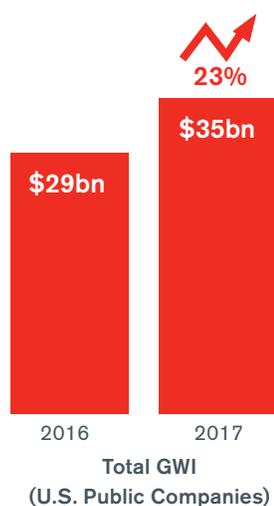
Duff & Phelps' Goodwill Impairment Studies are available online dating back to 2010.

Access historical studies covering the U.S., Europe and Canada.

www.duffandphelps.com/GWISudies

Highlights of the 2018 Study

M&A activity by U.S. publicly traded companies was again extremely robust in 2017, with a 9% increase in deal volume and a 3% uptick in deal value.* Historically, 2017 was one of the top years for M&A activity, surpassed only by 2015 in terms of deal value. This led to \$319 billion of goodwill being added to U.S. companies' balance sheets, the highest level since we began tracking this information in 2008.



Total goodwill impairment (GWI) recorded by U.S. public companies climbed 23%, reaching **\$35.1 billion in 2017**, despite a strengthening global economy. However, the number of GWI events has increased only marginally, from 288 in 2016 to 293 in 2017. This implies that the magnitude of impairments has generally become larger, with the average GWI per event rising by 21% in 2017, to \$120 million.

Diving deeper into the details, we find that seven out of the 10 industries analyzed saw their aggregate GWI amounts increase – Energy and Information Technology being notable exceptions. The top three industries in 2017 with the highest increase in GWI over 2016 are as follows, in order of magnitude (\$ in billions, except where noted):

- Telecommunication Services (\$3 million to \$4.8 billion)
- Healthcare (\$3.1 to \$7.2)
- Consumer Discretionary (\$5.4 to \$9.3)

Consumer Discretionary was the hardest-hit industry in 2017, with an aggregate GWI of \$9.3 billion. In fact, Consumer Discretionary's share of the overall annual GWI has steadily increased since 2014, reaching 27% in 2017.

Energy, which had been the worst-affected industry for three consecutive years (2014-2016), saw the most noticeable improvement in 2017. The amount of GWI in Energy dropped by 80% from 2016 (from \$7.2 billion to \$1.5 billion), while the number of events dropped in half from 27 to 13, reflecting a recovery in oil prices and an improved industry outlook.

The increased 2017 aggregate impairment amount was somewhat at odds with generally observed U.S. macroeconomic and financial market trends. Investor sentiment was bullish in 2017, leading to a rally in U.S. equity markets to record highs. For perspective, the S&P 500 Index increased approximately 19% on a price basis, the best performance since 2013. Investors were optimistic that the combination of still-accommodative monetary policies by major central banks and pro-growth policies, particularly a major U.S. tax reform enacted in late 2017, would help drive growth into 2018.

Recent Developments

In January 2017, the FASB issued ASU 2017-04, eliminating Step 2 of the goodwill impairment test. The effective date for U.S. publicly traded companies with a calendar year-end is not until the beginning of 2020. However, ASU 2017-04 allows for early adoption, with companies permitted to use the new rules for impairment tests performed on testing dates after January 1, 2017.

Our study reveals that of the companies recording the top 10 largest goodwill impairment events in 2017 (see next page), 80% have already adopted the new simplified test. Whether this rapid pace of early adoption will extend to the general universe of companies remains to be seen.

The FASB's main objective in introducing these simplifications was to reduce preparers' cost and complexity in the subsequent measurement of goodwill. Such savings may lead more companies to early adopt the modified impairment test.

The FASB concluded that the pared-down model would still maintain the usefulness of the information provided to users of financial statements. In addition, some FASB stakeholders (e.g., FASB's Investment Advisory Committee) do not believe a further simplified goodwill accounting model, such as the private company alternative, would be suitable for public companies. In contrast to non-cash amortization charges, which have no information value, an impairment model founded on fair value can provide insight about management's stewardship in making investment decisions and successfully integrating acquisitions.

2018 Study: Looking Back and Looking Ahead

The 2018 Study uses S&P Global's Capital IQ database as the primary source of data. Based on our methodology, we capture 8,400+ U.S. public companies in our base set. As with prior studies, calendar years (not "most recent fiscal years") were used to examine impairments during a specific period of time, regardless of company-specific choices of fiscal years. A detailed description of the 2018 Study methodology is included in the **Appendix**.*

In 2017, the top 10 goodwill impairments accounted for nearly half of the aggregate goodwill impairment of \$35.1 billion. Looking ahead to 2018, the top 3 goodwill impairment events disclosed as of the time of writing reached a combined \$29.8 billion, with several other material impairments already being reported.† Although full 2018 calendar year-end results for U.S. public companies will not be known for some time, this trend points to yet another significant increase in the overall goodwill impairment amount when compared to 2017.‡

TOP 10 GOODWILL IMPAIRMENTS IN 2017



* Financial data for all companies in the 2018 Study was adjusted, when applicable, to a calendar year-end (rather than the most recent fiscal year-end). Financial data was also adjusted to include goodwill impairment amounts disclosed within discontinued operations or disposal groups, when identified.

† E. I. du Pont de Nemours and Company, a subsidiary of DowDuPont Inc., disclosed a \$4.5 billion goodwill impairment in its stand-alone financial statements. However, at the consolidated level, DowDuPont Inc. did not record a goodwill impairment. Therefore, the three largest goodwill impairment amounts in 2018 excluded this event. Had it been included, the top 3 aggregate goodwill impairments would have been larger.

‡ Data for calendar year 2018 was compiled on December 5, 2018. The identity of the top 3 largest impairment events in 2018 may change once all companies report full-year 2018 results.

§ In addition to the amount shown, in 2017, Community Health Systems reported significant goodwill impairments in businesses classified as held for sale. However, financial statements disclosures were insufficient to isolate the amount of goodwill impairment from other asset impairments. Therefore, the goodwill impairment captured in this study pertains only to continuing operations.

SUMMARY STATISTICS BY INDUSTRY (TABLE 1)

Table 1 summarizes the annual amount of GWI and number of GWI events by industry, the proportion of companies within each industry that carry goodwill and the percentage of those that recorded a GWI. This format allows for a ready comparison of data across industries over time.*

Industries are listed in descending order of their total GWI amounts for 2017. For example, Consumer Discretionary tops the list with its \$9.3 billion aggregate impairment.

Additionally, the graphs on the right in Table 1 provide a quick comparison of (i) the preponderance of companies with goodwill within each industry; and (ii) the proportion of those companies that have recorded a GWI. For example:

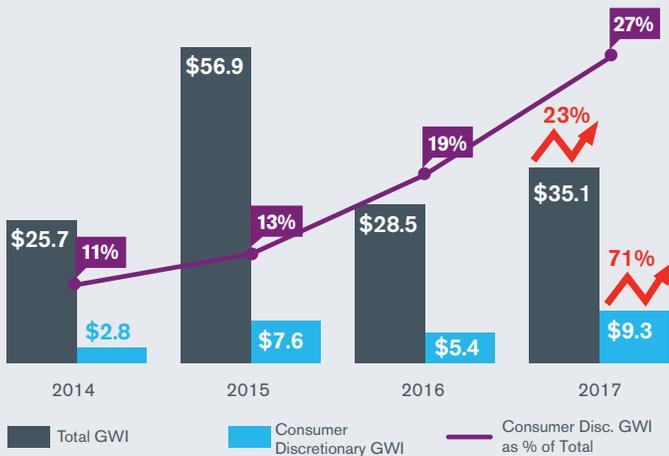


Goodwill Impairments

The first row of Table 1 data for each industry presents the annual dollar amounts of GWI (\$ in billions), immediately followed by the number of impairment events (shown in parentheses). †

7 out of 10 industries saw an increase in GWI in 2017

Consumer Discretionary was the hardest-hit industry, while a recovery in Energy reversed its 3-year trend at the top of the list

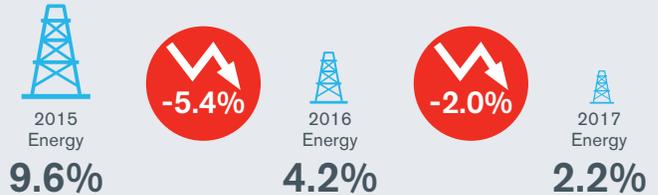


The Consumer Discretionary share of GWI has increased over time

Percent of Total Companies that Recorded a GWI

The second row in Table 1 provides the proportion of companies within each industry that recorded a GWI.

For a second consecutive year, Energy saw the largest decline in the proportion of companies recording an impairment



Percent of Companies with Goodwill

Since companies that do not carry goodwill on their books are also not susceptible to a GWI, for perspective, the third row in Table 1 provides the proportion of companies with goodwill within each industry.

Despite another stellar year for M&A, all industries but Materials showed a decrease in companies carrying goodwill in 2017

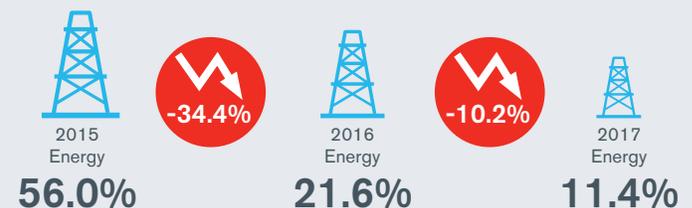
Telecommunication Services saw the largest decline



Percent of Companies with Goodwill that Recorded a GWI

The fourth row in Table 1 indicates the percentage of the companies with goodwill that recorded a GWI. This differs from the first row, where the percentages are based on all companies in each industry, rather than limited to those that carry goodwill on their balance sheets.

For two straight years, Energy recorded the largest decline in the number of companies with goodwill that recorded a GWI

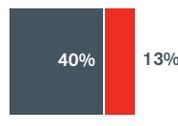
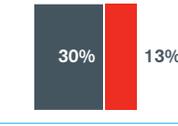
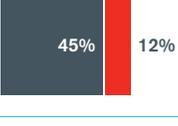
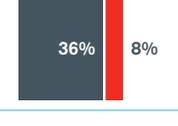
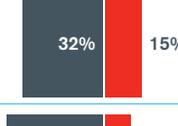
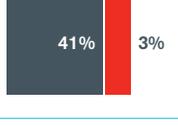
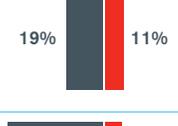
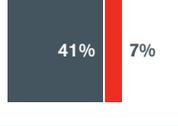
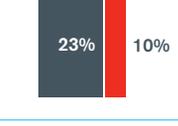
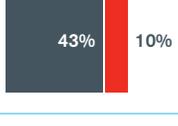
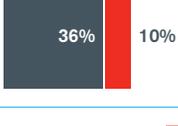


* The information covering the period between 2013 and 2015 was carried forward from prior studies.

† The number of events is broadly defined in this study: it captures whether a company has recorded any goodwill impairments in any given year (i.e., either "yes" or "no"). Thus, while a company could have recorded multiple goodwill impairments during a calendar year, it will still be considered a single event for purposes of this study.

2017 GOODWILL IMPAIRMENT

(TABLE 1)

	2017 (Companies)	2013	2014	2015	2016	2017		
		Goodwill Impairments: \$ in billions (number of events)					Companies with GW	Percent Recording GWI
		Percent of Total Companies that Recorded GWI						
		Percent of Companies with Goodwill						
		Percent of Companies with Goodwill that Recorded GWI						
 Consumer Discretionary (1,198)		3.1 (46) 3.7% 34.3% 10.7%	2.8 (61) 4.9% 34.5% 14.1%	7.6 (51) 4.2% 35.0% 12.0%	5.4 (58) 4.9% 41.0% 11.9%	9.3 (63) 5.3% 40.1% 13.1%		
 Healthcare (1,318)		3.6 (34) 2.7% 26.3% 10.4%	0.4 (29) 2.3% 27.6% 8.5%	1.3 (28) 2.2% 27.9% 8.0%	3.1 (39) 3.1% 30.8% 9.9%	7.2 (51) 3.9% 30.0% 12.9%		
 Industrials (1,097)		3.2 (61) 5.5% 39.3% 14.0%	3.5 (69) 6.2% 39.4% 15.8%	7.7 (74) 6.9% 40.3% 17.1%	4.5 (59) 5.3% 46.0% 11.6%	5.9 (59) 5.4% 45.4% 11.8%		
 Telecomm. Services (102)		1.1 (3) 2.7% 34.5% 7.9%	0.1 (3) 2.7% 31.8% 8.6%	0.1 (1) 1.0% 31.1% 3.1%	0.0 (2) 1.9% 41.9% 4.5%	4.9 (3) 2.9% 36.3% 8.1%		
 Consumer Staples (466)		1.0 (10) 2.1% 24.6% 8.7%	3.5 (18) 3.9% 26.3% 14.6%	2.5 (18) 3.9% 25.7% 15.0%	0.8 (19) 4.1% 33.0% 12.3%	1.8 (23) 4.9% 32.0% 15.4%		
 Financials and Real Estate (1,463)		1.0 (22) 1.5% 33.6% 4.4%	3.1 (40) 2.7% 35.1% 7.7%	1.4 (24) 1.6% 37.4% 4.4%	1.2 (15) 1.1% 42.5% 2.5%	1.8 (20) 1.4% 41.1% 3.3%		
 Energy (598)		2.1 (19) 2.7% 20.1% 13.6%	5.8 (32) 4.6% 20.0% 23.0%	18.2 (65) 9.6% 17.1% 56.0%	7.2 (27) 4.2% 19.3% 21.6%	1.5 (13) 2.2% 19.1% 11.4%		
 Information Technology (1,451)		1.6 (58) 3.8% 35.0% 10.8%	3.6 (66) 4.3% 36.2% 11.9%	12.9 (65) 4.4% 37.1% 11.8%	4.1 (44) 3.0% 42.0% 7.2%	1.3 (41) 2.8% 40.7% 6.9%		
 Materials (594)		4.6 (18) 2.7% 20.2% 13.5%	2.7 (18) 2.7% 19.8% 13.8%	2.8 (18) 2.9% 19.9% 14.6%	1.0 (19) 3.2% 23.1% 13.7%	1.3 (14) 2.4% 23.1% 10.2%		
 Utilities (143)		0.4 (3) 1.9% 37.3% 5.0%	0.2 (5) 3.1% 39.1% 7.9%	2.3 (6) 4.0% 43.0% 9.2%	1.4 (6) 4.2% 46.9% 9.0%	0.2 (6) 4.2% 42.7% 9.8%		
Total (8,430)		21.7 (274) 3.1% 31.1% 10.1%	25.7 (341) 3.9% 31.9% 12.3%	56.9 (350) 4.1% 32.5% 12.7%	28.5 (288) 3.4% 37.3% 9.2%	35.1 (293) 3.5% 36.3% 9.6%		

SUMMARY STATISTICS BY INDUSTRY

(TABLE 2)

Table 1 captured the total amount of GWI and the frequency of events by industry. In Table 2, the focus shifts to the respective industries' (i) relative importance of goodwill to the overall asset base (goodwill intensity); (ii) magnitude of annual impairment relative to the carrying amount of goodwill; and (iii) magnitude of such impairment in relation to total assets (the last two ratios being measures of loss intensity).

Goodwill intensity, defined here as goodwill as a percentage of total assets (GW/TA), measures the proportion of an industry's total assets represented by goodwill. Since goodwill generally arises as a result of a business combination, goodwill intensity is greater in industry sectors with significant M&A activity.

The first loss intensity measure, goodwill impairment to goodwill (GWI/GW), indicates the magnitude of goodwill impairments. In other words, it measures the proportion of an industry's goodwill that is impaired each year.

These first two metrics are captured visually for 2017 on the graphs on the right of Table 2. For example:



The second loss intensity measure, goodwill impairments to total assets (GWI/TA), quantifies the percent of an industry's total asset base that was impaired.

Goodwill Intensity

The first row in Table 2 illustrates Goodwill to Total Assets (GW/TA) reported over time for each industry, with 2017 specifically highlighted in the gray circle of the graphic displayed farthest on the right.

Top 3 industries with most goodwill in their asset base



		Intensity Measure	How?	Why?
Goodwill Intensity	Which industries had/have the most goodwill on their balance sheets?	GW/TA	Goodwill as a percentage of total assets, measured at year-end	Indicates how significant an industry's goodwill is in relation to total assets
Goodwill Loss Intensity	Which industries' goodwill got hit hardest by impairments?	GWI/GW	Goodwill impairments (total) as a percentage of the prior year's total goodwill	Indicates how impairments impacted each industry's goodwill
Asset Loss Intensity	Which industries' balance sheets got hit hardest by impairments?	GWI/TA	Goodwill impairments (total) as a percentage of the prior year's total assets	Indicates how impairments impacted each industry's total assets

Overall, 5 out of 10 industries saw a rise in goodwill intensity

Materials showed a notable increase in GW/TA



Goodwill Impairment to Goodwill

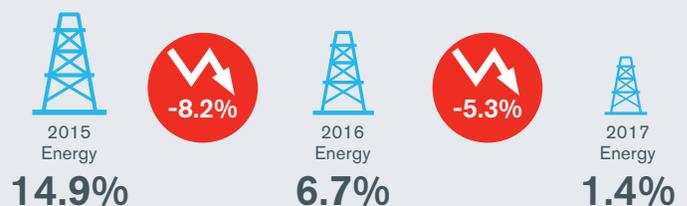
The second row of Table 2 presents the first measure of loss intensity (GWI/GW) recognized for each industry over time, with 2017 metrics displayed in the triangle portion of the graphic located on the far right.

7 out of 10 industries saw an increase in GWI/GW

Telecommunication Services saw the largest increase



The downward trend in Energy's loss intensity continued, reflecting a recovery in oil prices and an improved industry outlook



Goodwill Impairment to Total Assets

This second measure of loss intensity is presented in the third row of Table 2 for each industry. Goodwill impairment charges represent a relatively small proportion of a company's total asset base.

2017 GOODWILL IMPAIRMENT

(TABLE 2)

		2013	2014	2015	2016	2017		
		Goodwill Intensity (GW/TA)					GW/TA	GW/GW
2017 (Companies)		Loss Intensity (GWI/GW)						
		Loss Intensity (GWI/TA)						
	Consumer Discretionary (1,198)	13.8% 1.1% 0.1%	13.6% 0.9% 0.1%	13.7% 2.4% 0.3%	13.7% 1.8% 0.2%	14.7% 2.5% 0.3%	15%	2.5%
	Healthcare (1,318)	22.9% 1.0% 0.2%	23.0% 0.1% 0.0%	26.0% 0.3% 0.1%	26.2% 0.7% 0.2%	27.7% 1.4% 0.4%	28%	1.4%
	Industrials (1,097)	16.4% 0.8% 0.1%	16.5% 0.8% 0.1%	17.9% 1.9% 0.3%	19.3% 1.0% 0.2%	20.4% 1.3% 0.2%	20%	1.3%
	Telecomm. Services (102)	16.8% 0.8% 0.2%	17.9% 0.1% 0.0%	19.2% 0.1% 0.0%	19.6% 0.0% 0.0%	18.7% 2.6% 0.5%	19%	2.6%
	Consumer Staples (466)	20.8% 0.4% 0.1%	20.0% 1.3% 0.3%	22.0% 0.9% 0.2%	22.4% 0.2% 0.1%	21.7% 0.5% 0.1%	22%	0.5%
	Financials and Real Estate (1,463)	1.6% 0.3% 0.0%	1.5% 0.8% 0.0%	1.6% 0.3% 0.0%	1.8% 0.2% 0.0%	1.8% 0.3% 0.0%	2%	0.3%
	Energy (598)	5.0% 1.9% 0.1%	5.0% 4.9% 0.2%	5.0% 14.9% 0.7%	4.7% 6.7% 0.3%	4.4% 1.4% 0.1%	4%	1.4%
	Information Technology (1,451)	18.6% 0.4% 0.1%	19.3% 0.9% 0.2%	19.9% 2.7% 0.5%	19.9% 0.8% 0.2%	19.7% 0.2% 0.0%	20%	0.2%
	Materials (594)	12.9% 4.5% 0.6%	13.5% 2.6% 0.3%	14.9% 2.6% 0.4%	15.3% 0.9% 0.1%	19.0% 1.1% 0.2%	19%	1.1%
	Utilities (143)	4.8% 0.6% 0.0%	4.5% 0.3% 0.0%	4.5% 3.5% 0.2%	5.3% 2.1% 0.1%	5.2% 0.2% 0.0%	5%	0.2%
	Total (8,430)	6.3% 0.9% 0.1%	6.4% 1.0% 0.1%	7.0% 2.1% 0.1%	7.2% 1.0% 0.1%	7.5% 1.1% 0.1%	8%	1.1%

2017 INDUSTRY SPOTLIGHTS

In contrast to Tables 1 and 2, the Industry Spotlights allow the reader a more in-depth look at the 2017 statistics for the respective industries. Industry Spotlights cover 10 industry sectors. They provide a focus on relevant metrics and statistics for the respective industries.

Starting with the 2015 Study, we enhanced our methodology, resulting in an expanded company base set of 8,700+ publicly traded companies compared to 5,153 in 2013 (with the current company base at around 8,400 companies). The graphic on the top right of each Industry Spotlight displays data for calendar year 2013 under the current methodology. The time frame for the graphic on the top left of each Spotlight also starts with 2013 using the current methodology.

Market-to-Book Ratio

While not a sole or definitive indicator of impairment, a company's market capitalization should not be ignored during a goodwill impairment test. Understanding the dynamics of the market-to-book ratios is informative, but the fact that an individual company has a ratio below 1.0 does not by default result in failing either Step 1 or 2 of the goodwill impairment test. Reporting unit structures, their respective performance and where the goodwill resides are a few of the critical factors that must be considered in the impairment testing process.

A low market-to-book ratio will, however, likely create challenges in supporting the Step 0 "more-likely-than-not" (greater than a 50% likelihood) conclusion that the fair value of a reporting unit is not less than its carrying amount, required for a qualitative assessment.

Guide

The guide below provides a brief description of the components of the Industry Spotlights.

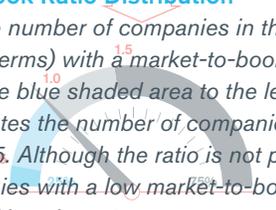
Goodwill Trends

Provides the goodwill amounts for year-end 2013 and 2017, as well as the aggregate goodwill additions and impairments over that period.



Market-to-Book Ratio Distribution

Highlights the number of companies in the industry (shown in percentages terms) with a market-to-book ratio below and above 1.0. The blue shaded area to the left of the needle further separates the number of companies with a ratio above and below 0.5. Although the ratio is not predictive in and of itself, companies with a low market-to-book ratio would be at a greater risk of impairment.



Size of Industry

Represents the size of the industry relative to the combined size of all the companies included in the 2018 Study sample, measured in terms of market capitalization.



Impairment History

Annual amounts and number of goodwill impairment events. The industry market-to-book ratio (blue line) provides some context for the annual impairment measures, although it is not predictive in and of itself.



Summary Statistics

Goodwill Intensity (GW/TA), Goodwill Impairment to Goodwill (GWI/GW), Companies with Goodwill and the percentage of those that recorded goodwill impairment reported for calendar year 2017 are depicted here and also in Tables 1 and 2. The median market-to-book ratio is also shown here.

Index

Five-year index of the industry sector and the S&P 500 Index. Summarizes the relative performance of the industry: reflects what a \$1 investment in the beginning of 2013 would be worth at the end of 2017.

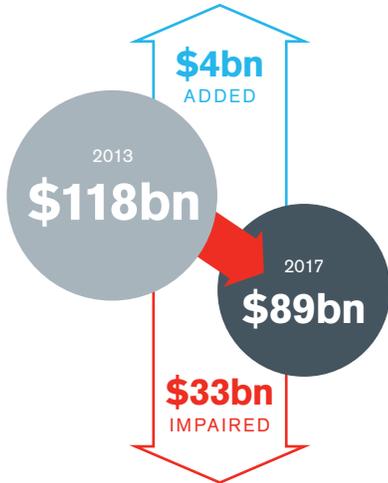


2017 Industry Spotlight

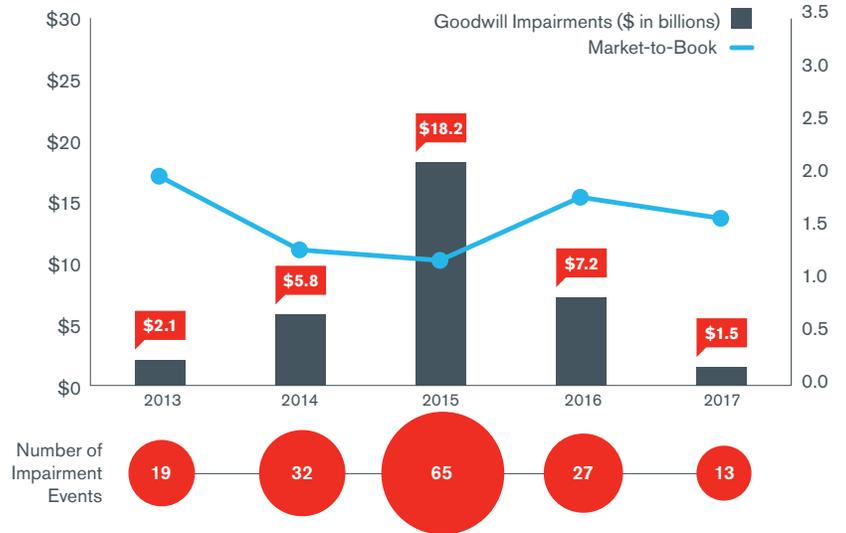


Energy
GICS Code 10

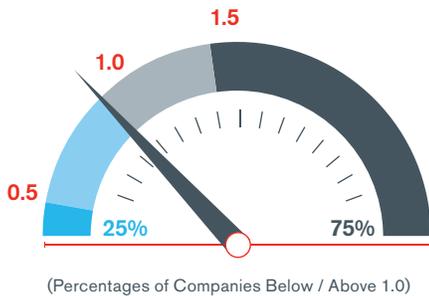
Goodwill Trends 2013 – 2017



Impairment History



Market-to-Book Ratio Distribution (Based on Number of Companies)



598
Companies

4.4%
Goodwill to Total Assets
(GW/TA)

1.4%
Goodwill Impaired (GWI/
GW ratio)

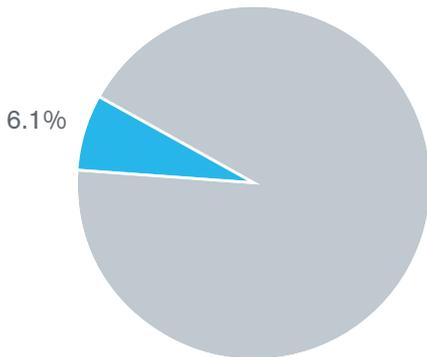
19.1%
Companies with
Goodwill

11.4%
Companies with
Goodwill that Recorded
a Goodwill Impairment
in 2017

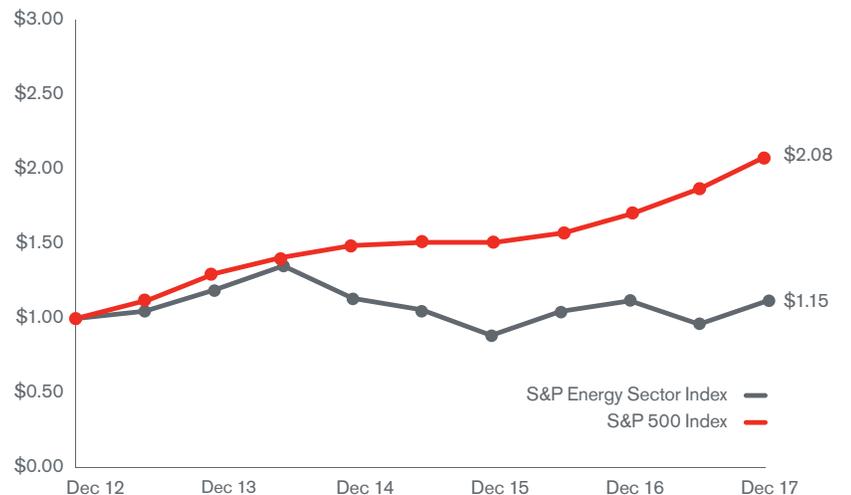
1.6
Market-to-Book
Ratio (median)

Size of Industry

(Relative to Study's Total Market Cap)



Index (Year-End 2012 = \$1)

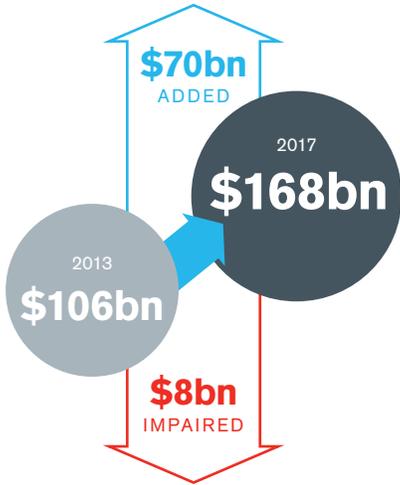


2017 Industry Spotlight

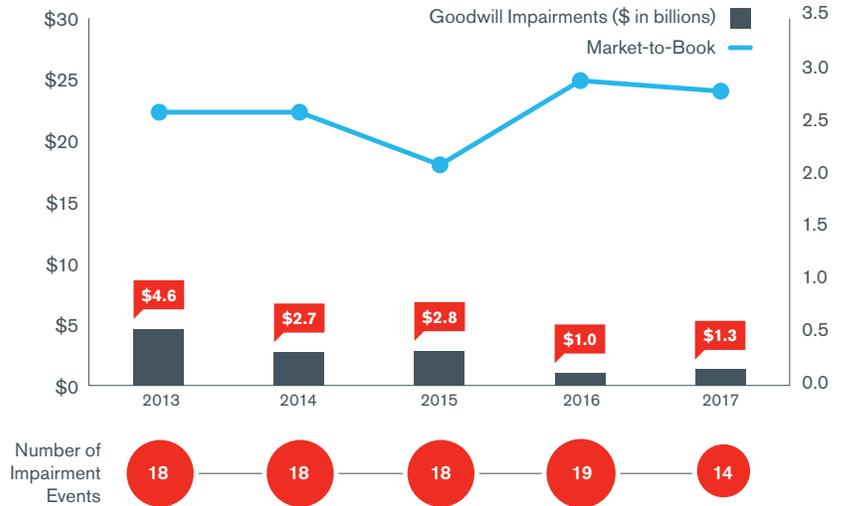


Materials
GICS Code 15

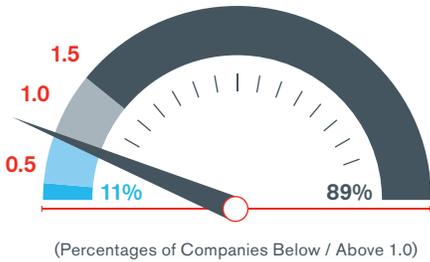
Goodwill Trends 2013 – 2017



Impairment History



Market-to-Book Ratio Distribution (Based on Number of Companies)



594
Companies

19.0%
Goodwill to Total Assets
(GW/TA)

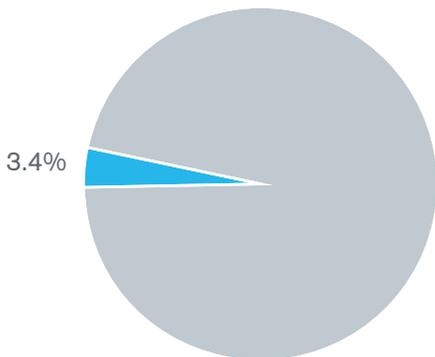
1.1%
Goodwill Impaired
(GWI/GW ratio)

23.1%
Companies with
Goodwill

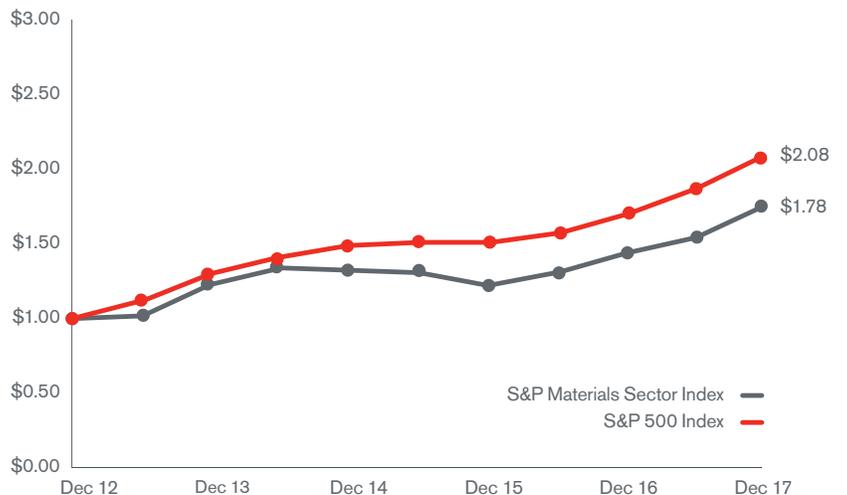
10.2%
Companies with
Goodwill that Recorded
a Goodwill Impairment
in 2017

2.8
Market-to-Book
Ratio (median)

Size of Industry (Relative to Study's Total Market Cap)



Index (Year-End 2012 = \$1)

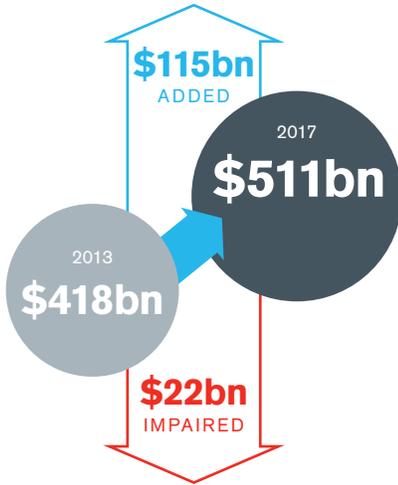


2017 Industry Spotlight

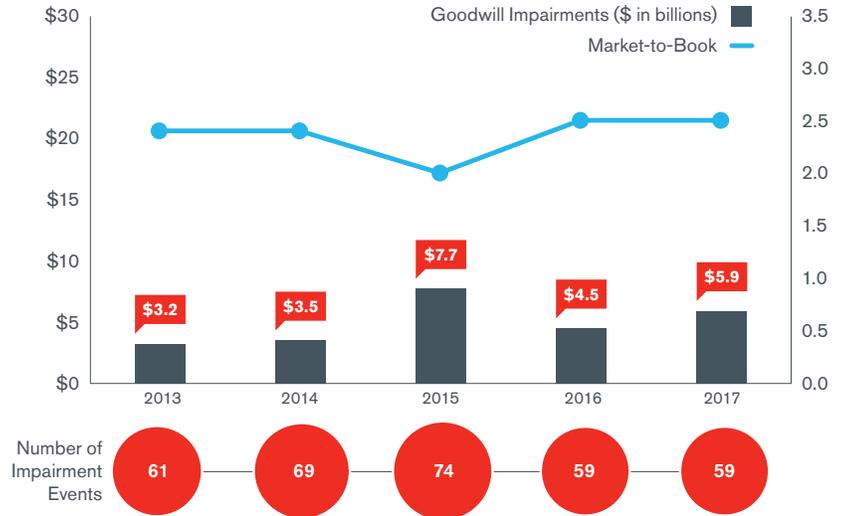


Industrials
GICS Code 20

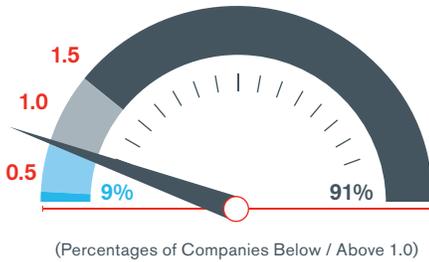
Goodwill Trends 2013 – 2017



Impairment History



Market-to-Book Ratio Distribution (Based on Number of Companies)



1,097
Companies

20.4%
Goodwill to Total Assets
(GW/TA)

1.3%
Goodwill Impaired
(GWI/GW ratio)

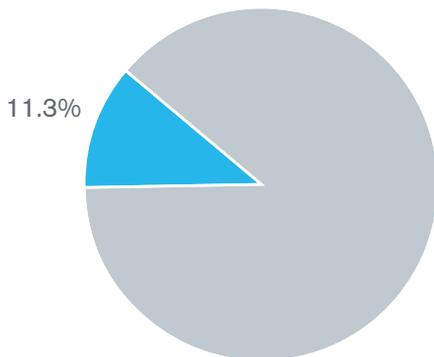
45.4%
Companies with
Goodwill

11.8%
Companies with
Goodwill that Recorded
a Goodwill Impairment
in 2017

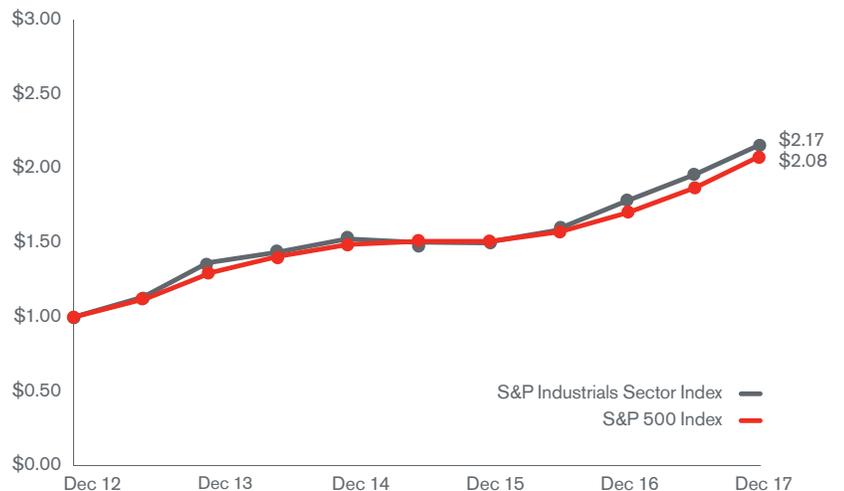
2.5
Market-to-Book
Ratio (median)

Size of Industry

(Relative to Study's Total Market Cap)



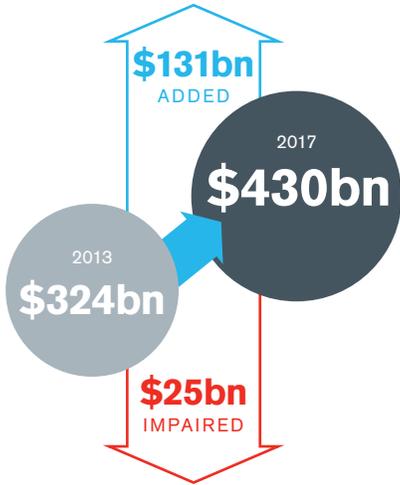
Index (Year-End 2012 = \$1)



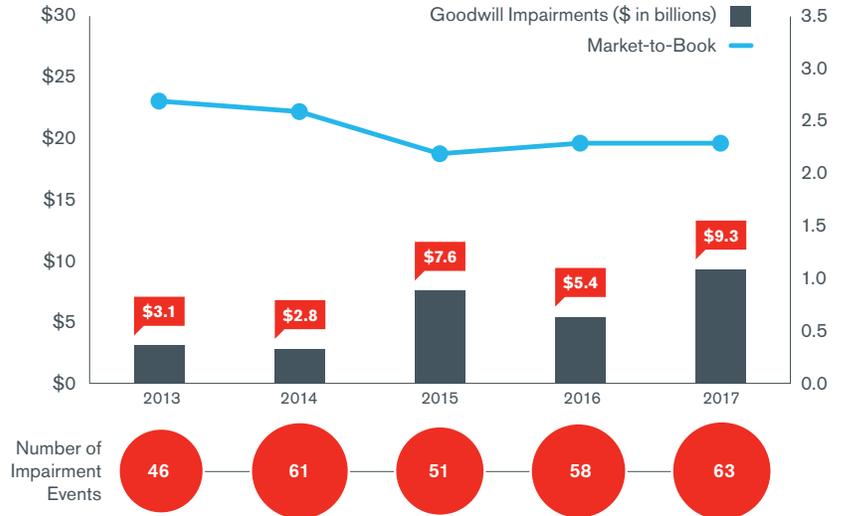
2017 Industry Spotlight



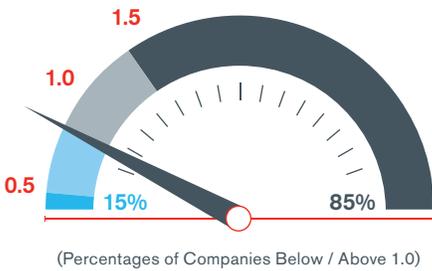
Goodwill Trends 2013 – 2017



Impairment History



Market-to-Book Ratio Distribution (Based on Number of Companies)



1,198
Companies

14.7%
Goodwill to Total Assets
(GW/TA)

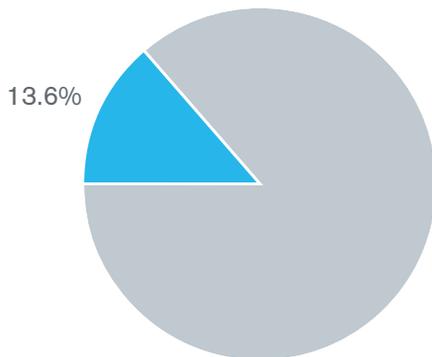
2.5%
Goodwill Impaired
(GWI/GW ratio)

40.1%
Companies with
Goodwill

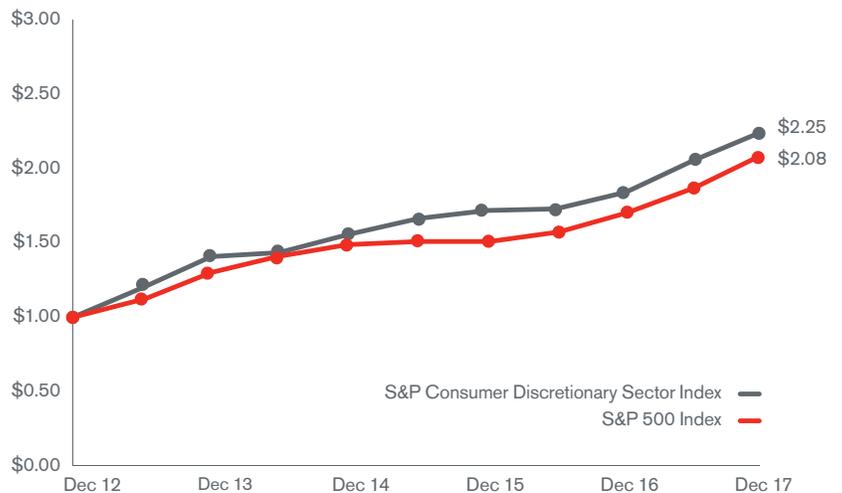
13.1%
Companies with
Goodwill that Recorded
a Goodwill Impairment
in 2017

2.3
Market-to-Book
Ratio (median)

Size of Industry (Relative to Study's Total Market Cap)



Index (Year-End 2012 = \$1)



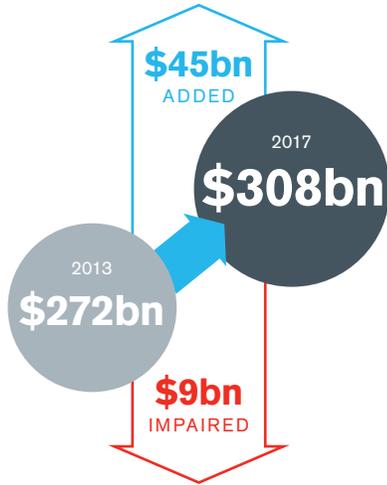


Consumer Staples

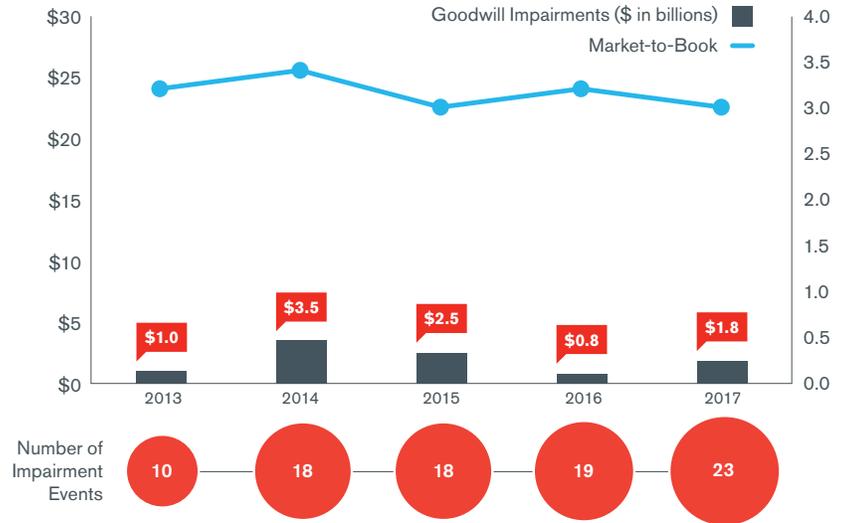
GICS Code 30

2017 Industry Spotlight

Goodwill Trends 2013 – 2017

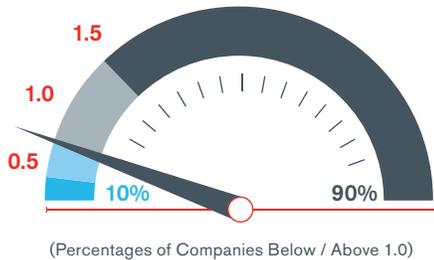


Impairment History



Market-to-Book Ratio Distribution

(Based on Number of Companies)



466
Companies

21.7%
Goodwill to Total Assets (GW/TA)

0.5%
Goodwill Impaired (GWI/GW ratio)

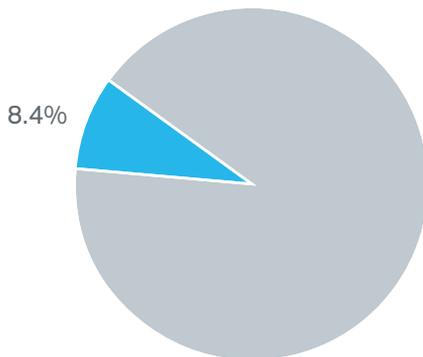
32.0%
Companies with Goodwill

15.4%
Companies with Goodwill that Recorded a Goodwill Impairment in 2017

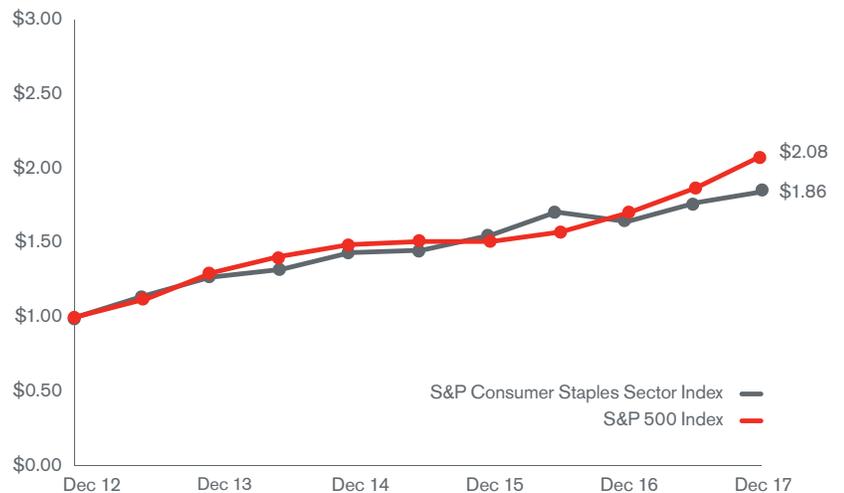
3.0
Market-to-Book Ratio (median)

Size of Industry

(Relative to Study's Total Market Cap)



Index (Year-End 2012 = \$1)



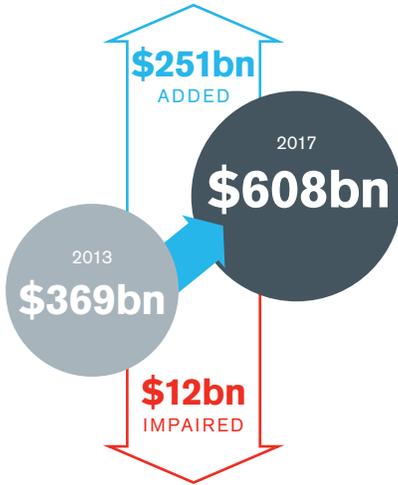
2017 Industry Spotlight



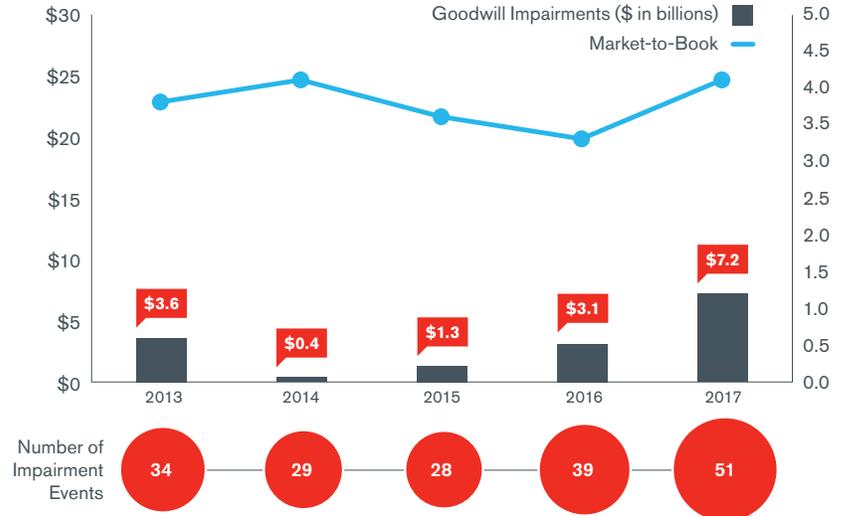
Healthcare

GICS Code 35

Goodwill Trends 2013 – 2017



Impairment History



Market-to-Book Ratio Distribution

(Based on Number of Companies)



(Percentages of Companies Below / Above 1.0)

1,318
Companies

27.7%
Goodwill to Total Assets
(GW/TA)

1.4%
Goodwill Impaired
(GWI/GW ratio)

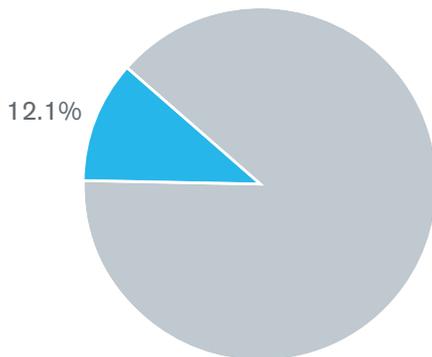
30.0%
Companies with
Goodwill

12.9%
Companies with
Goodwill that Recorded
a Goodwill Impairment
in 2017

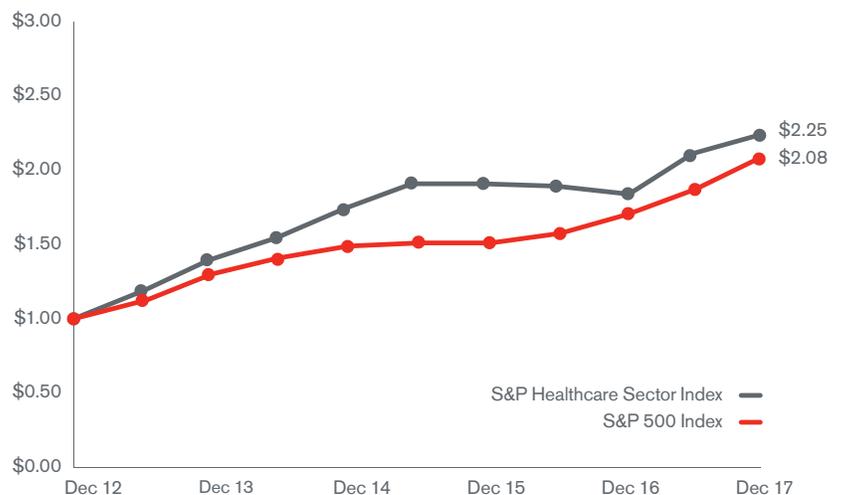
4.1
Market-to-Book
Ratio (median)

Size of Industry

(Relative to Study's Total Market Cap)



Index (Year-End 2012 = \$1)



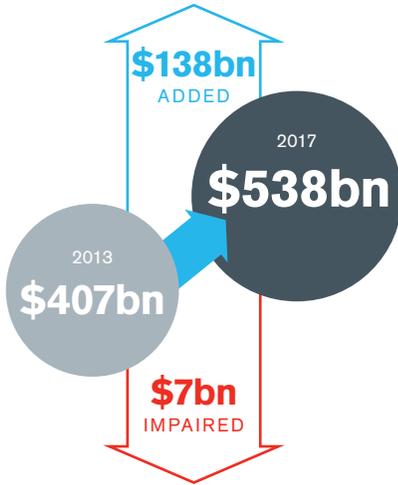
2017 Industry Spotlight



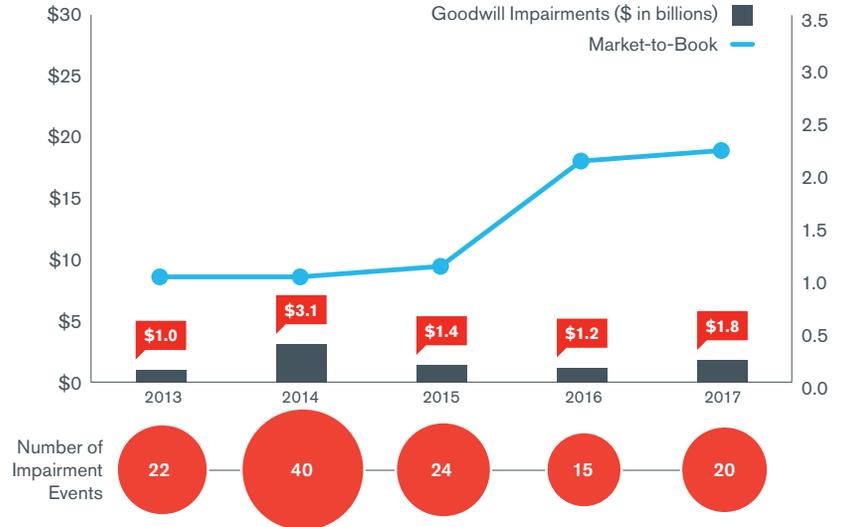
Financials

GICS Code 40

Goodwill Trends 2013 – 2017

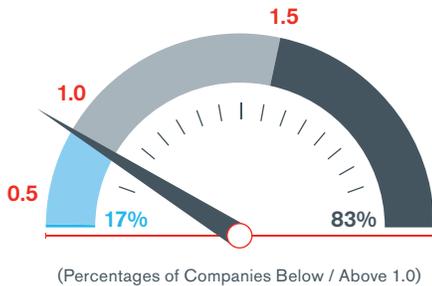


Impairment History



Market-to-Book Ratio Distribution

(Based on Number of Companies)



1,463
Companies

1.8%
Goodwill to Total Assets
(GW/TA)

0.3%
Goodwill Impaired
(GWI/GW ratio)

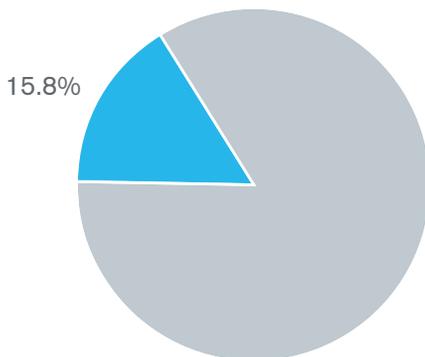
41.1%
Companies with
Goodwill

3.3%
Companies with
Goodwill that Recorded
a Goodwill Impairment
in 2017

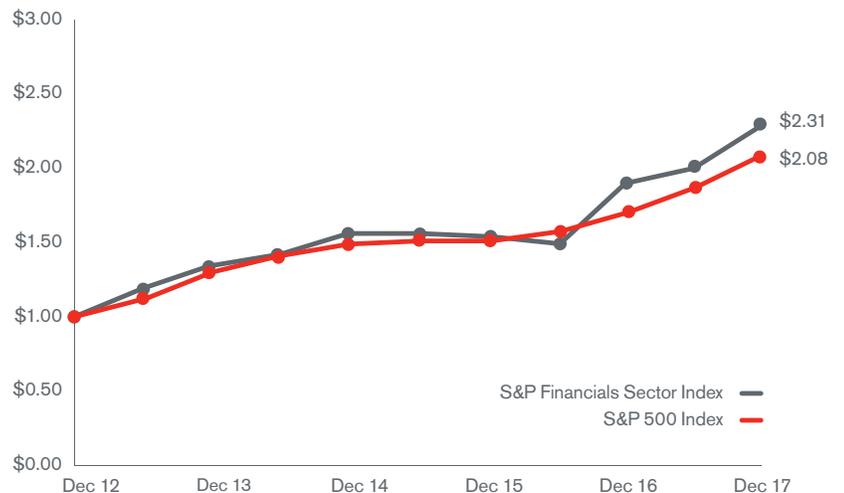
2.2
Market-to-Book
Ratio (median)

Size of Industry

(Relative to Study's Total Market Cap)



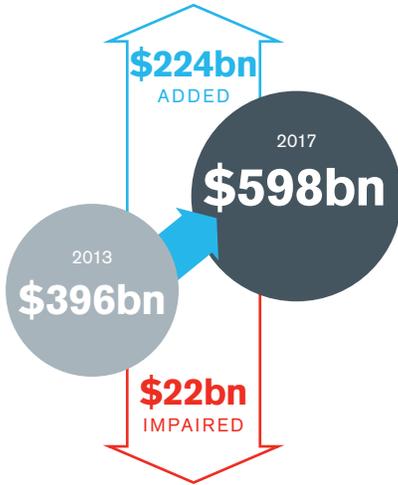
Index (Year-End 2012 = \$1)



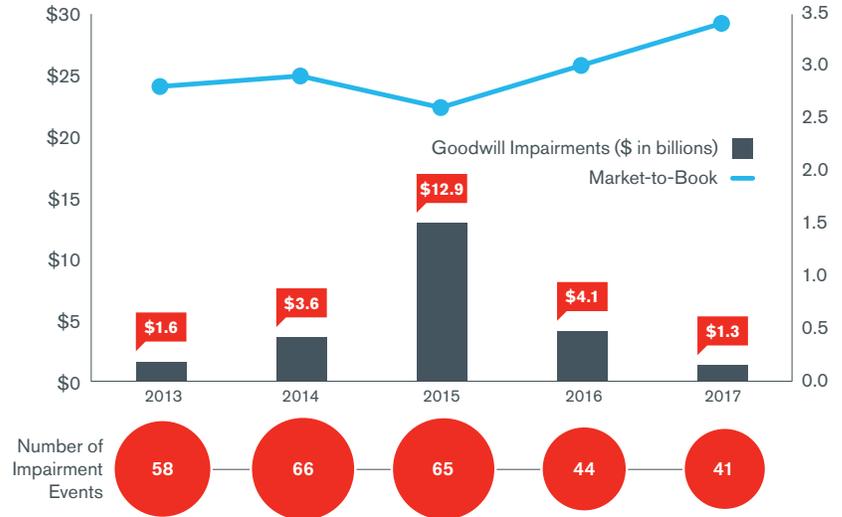
2017 Industry Spotlight



Goodwill Trends 2013 – 2017

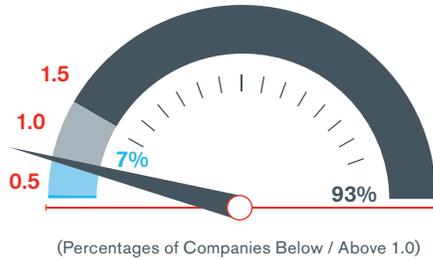


Impairment History



Market-to-Book Ratio Distribution

(Based on Number of Companies)



1,451
Companies

19.7%
Goodwill to Total Assets (GW/TA)

0.2%
Goodwill Impaired (GWI/GW ratio)

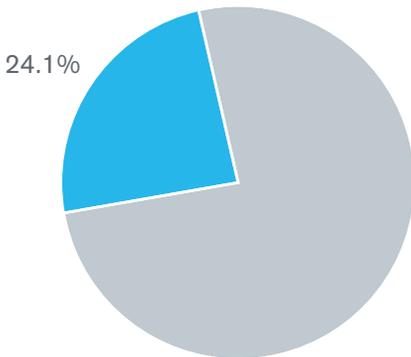
40.7%
Companies with Goodwill

6.9%
Companies with Goodwill that Recorded a Goodwill Impairment in 2017

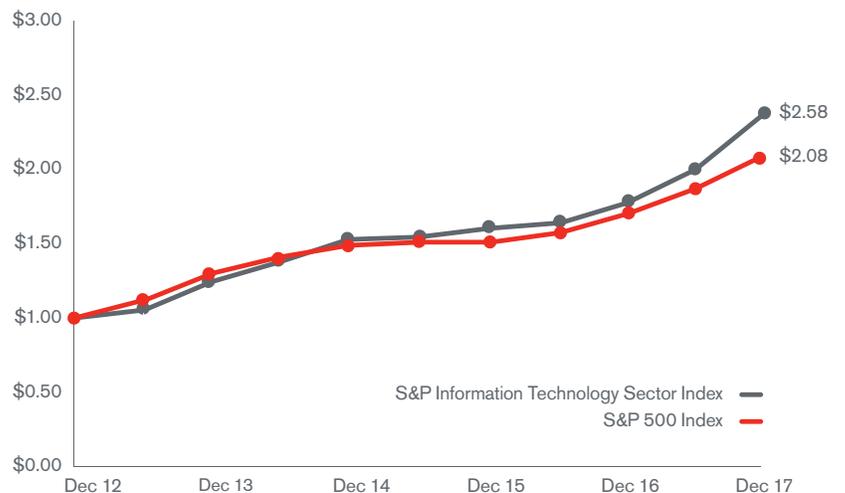
3.4
Market-to-Book Ratio (median)

Size of Industry

(Relative to Study's Total Market Cap)

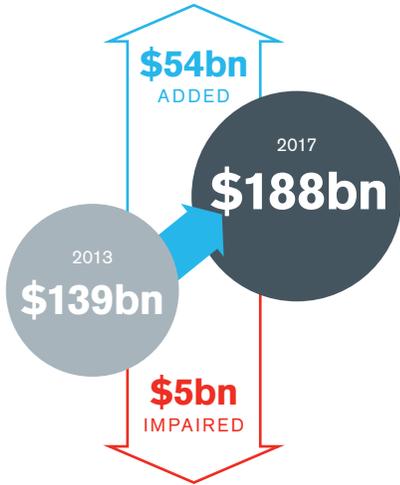


Index (Year-End 2012 = \$1)

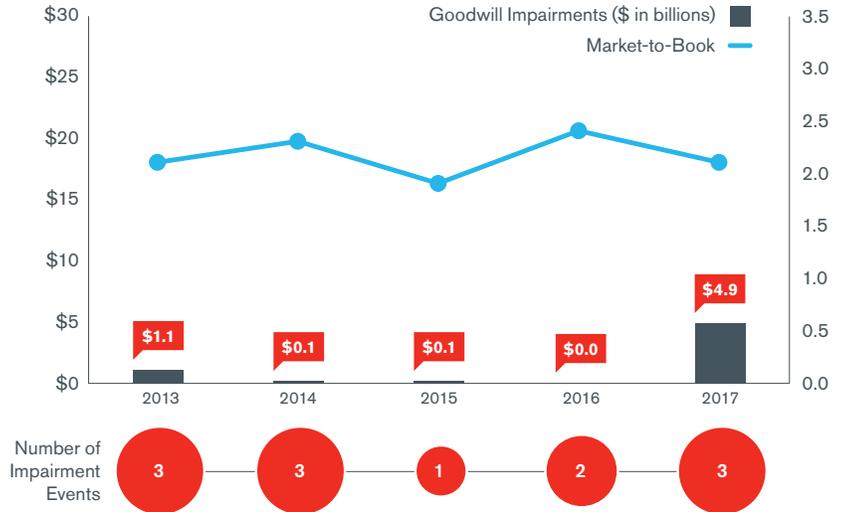


2017 Industry Spotlight

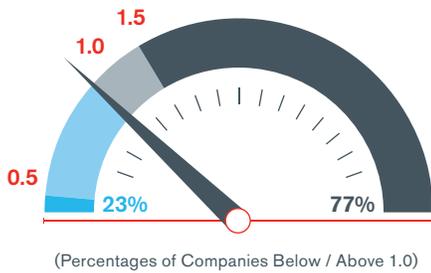
Goodwill Trends 2013 – 2017



Impairment History



Market-to-Book Ratio Distribution (Based on Number of Companies)



102
Companies

18.7%
Goodwill to Total Assets (GW/TA)

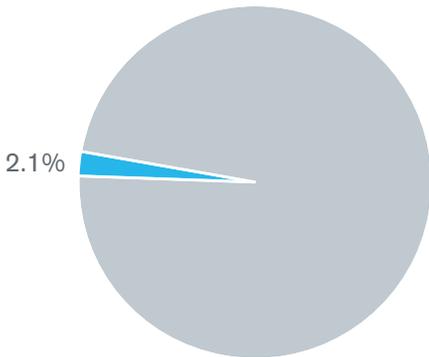
2.6%
Goodwill Impaired (GWI/GW ratio)

36.3%
Companies with Goodwill

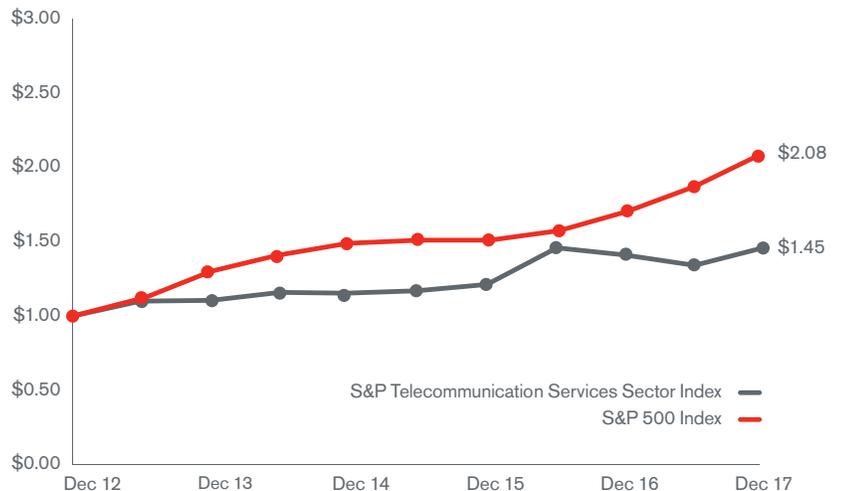
8.1%
Companies with Goodwill that Recorded a Goodwill Impairment in 2017

2.1
Market-to-Book Ratio (median)

Size of Industry (Relative to Study's Total Market Cap)



Index (Year-End 2012 = \$1)

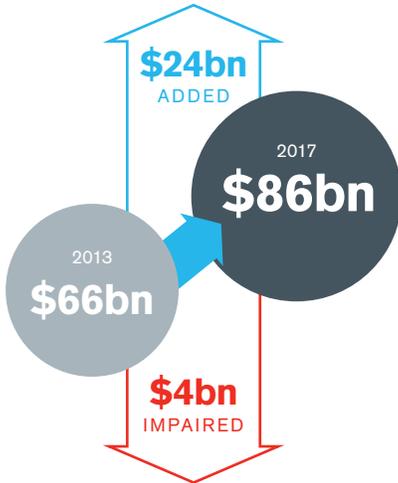


2017 Industry Spotlight

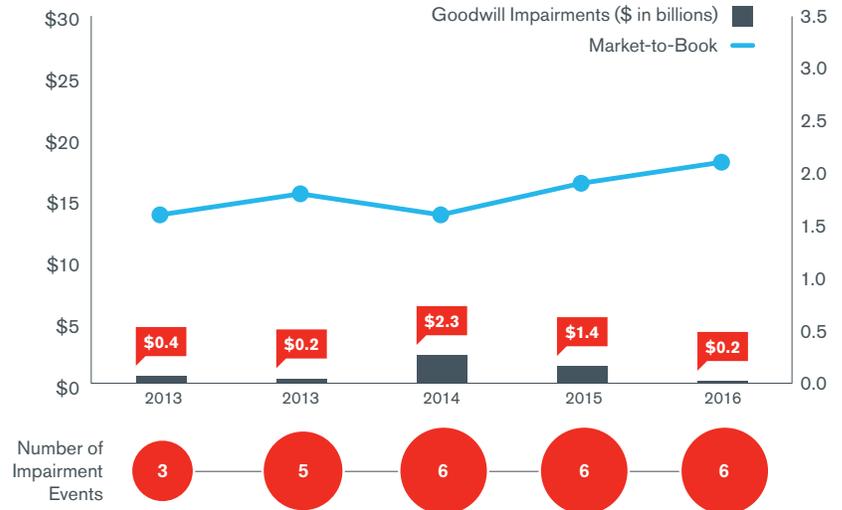


Utilities
GICS Code 55

Goodwill Trends 2013 – 2017

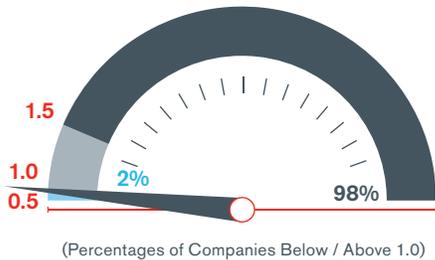


Impairment History



Market-to-Book Ratio Distribution

(Based on Number of Companies)



143
Companies

5.2%
Goodwill to Total Assets
(GW/TA)

0.2%
Goodwill Impaired
(GWI/GW ratio)

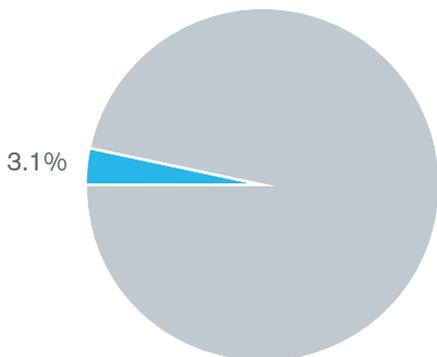
42.7%
Companies with
Goodwill

9.8%
Companies with
Goodwill that Recorded
a Goodwill Impairment
in 2017

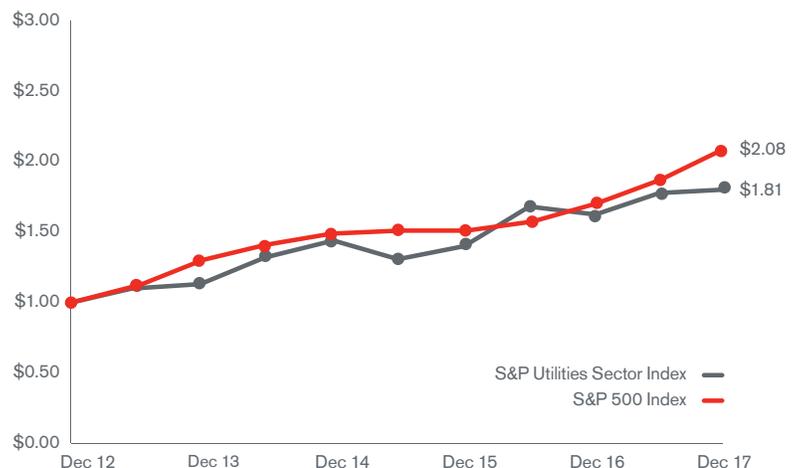
2.1
Market-to-Book
Ratio (median)

Size of Industry

(Relative to Study's Total Market Cap)



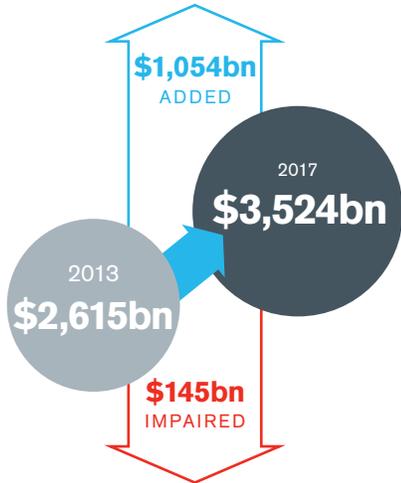
Index (Year-End 2012 = \$1)



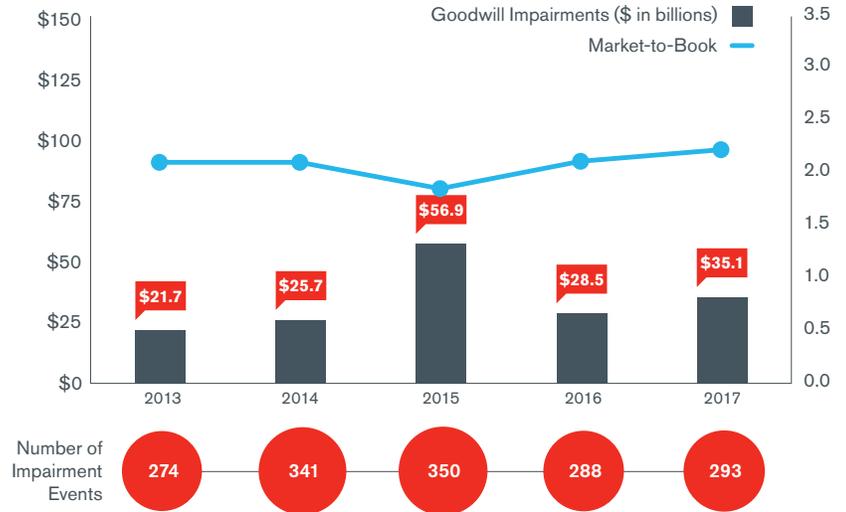
2017 Industry Spotlight

2017 Composite Industry Spotlight

Goodwill Trends 2013 – 2017

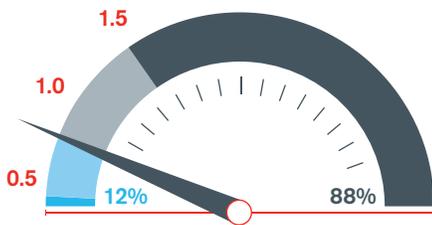


Impairment History



Market-to-Book Ratio Distribution

(Based on Number of Companies)



(Percentages of Companies Below / Above 1.0)

8,430
Companies

7.5%
Goodwill to Total Assets
(GW/TA)

1.1%
Goodwill Impaired
(GWI/GW ratio)

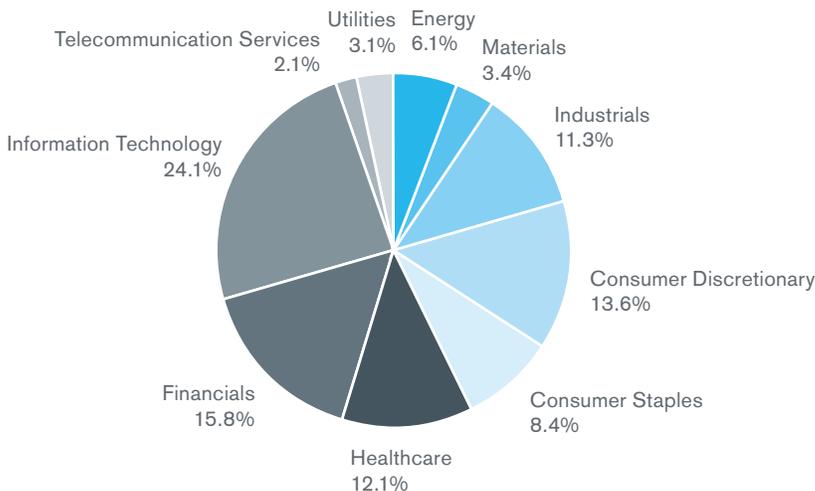
36.3%
Companies with
Goodwill

9.6%
Companies with
Goodwill that Recorded
a Goodwill Impairment
in 2017

2.2
Market-to-Book
Ratio (median)

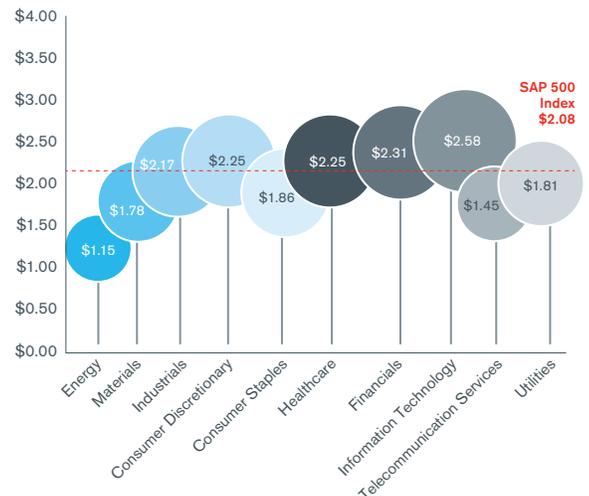
Size of Industry

(Relative to Study's Total Market Cap)



Cumulative 5-year Total Return by Industry from 2013 to 2017 Index

(Year-End 2012 = \$1)



GOODWILL IMPAIRMENTS BY SUBINDUSTRY CALENDAR YEAR 2017

Goodwill Intensity:

- Goodwill to Total Assets (GW/TA)

Loss Intensity:

- Goodwill Impairment to Goodwill (GWI/GW)

List of Industries by Subindustry, as defined by Global Industry Classification Standard (GICS)

GICS Code	GICS Subindustry Name	Number Cos.	% of Cos. with GW	GW/TA	GWI/GW	% of Cos. with GW that Recorded GWI	Goodwill Impairment (\$ in millions)*	Market-to-Book Ratio
Energy							\$1,457 (industry total)	
10101010	Oil and Gas Drilling	9	44%	4.5%	–	–	–	1.0
10101020	Oil and Gas Equipment and Services	92	36%	13.5%	0.4%	6.1%	\$69	1.3
10102010	Integrated Oil and Gas	5	20%	0.7%	–	–	–	1.9
10102020	Oil and Gas Exploration and Production	351	4%	2.4%	1.2%	20.0%	\$158	1.7
10102030	Oil and Gas Refining and Marketing	65	28%	6.7%	0.6%	11.1%	\$73	1.5
10102040	Oil and Gas Storage and Transportation	40	68%	9.8%	2.1%	22.2%	\$1,156	2.0
10102050	Coal and Consumable Fuels	36	6%	0.4%	–	–	–	1.8
Materials							\$1,298 (industry total)	
15101010	Commodity Chemicals	59	20%	12.1%	–	–	–	2.7
15101020	Diversified Chemicals	8	50%	28.3%	–	–	–	2.5
15101030	Fertilizers and Agricultural Chemicals	30	27%	14.0%	–	–	–	1.9
15101040	Industrial Gases	5	60%	10.4%	3.7%	33.3%	\$145	2.3
15101050	Specialty Chemicals	82	41%	25.5%	0.6%	8.8%	\$180	3.8
15102010	Construction Materials	19	32%	25.4%	0.0%	16.7%	\$3	2.9
15103010	Metal and Glass Containers	15	60%	27.4%	0.1%	11.1%	\$19	4.4
15103020	Paper Packaging	15	60%	18.2%	1.2%	11.1%	\$197	3.7
15104010	Aluminum	11	27%	0.8%	18.6%	66.7%	\$52	2.2
15104020	Diversified Metals and Mining	129	2%	9.1%	0.1%	33.3%	\$0	4.3
15104025	Copper	4	25%	0.1%	–	–	–	4.7
15104030	Gold	97	–	–	–	–	–	2.3
15104040	Precious Metals and Minerals	42	–	–	–	–	–	19.2
15104045	Silver	9	–	–	–	–	–	1.4
15104050	Steel	42	36%	8.4%	2.1%	20.0%	\$124	1.7
15105010	Forest Products	11	18%	1.5%	–	–	–	2.4
15105020	Paper Products	16	38%	6.7%	29.6%	16.7%	\$578	1.3
Industrials							\$5,922 (industry total)	
20101010	Aerospace and Defense	93	46%	27.4%	1.4%	20.9%	\$1,780	3.1
20102010	Building Products	43	67%	18.9%	0.1%	3.4%	\$6	3.5
20103010	Construction and Engineering	61	49%	24.9%	1.4%	26.7%	\$223	2.2
20104010	Electrical Components and Equipment	117	25%	22.7%	0.4%	10.3%	\$51	1.7
20104020	Heavy Electrical Equipment	38	16%	14.5%	13.1%	16.7%	\$87	2.3
20105010	Industrial Conglomerates	10	60%	24.9%	2.4%	16.7%	\$2,550	4.2
20106010	Construction Machinery and Heavy Trucks	36	75%	9.7%	0.0%	3.7%	\$3	2.8
20106015	Agricultural and Farm Machinery	15	33%	6.4%	0.1%	20.0%	\$1	3.5
20106020	Industrial Machinery	164	44%	31.3%	0.4%	11.1%	\$180	3.1
20107010	Trading Companies and Distributors	76	46%	16.0%	0.0%	2.9%	\$6	2.2

* Any differences in totals are due to rounding.

GOODWILL IMPAIRMENTS BY SUBINDUSTRY CALENDAR YEAR 2017

List of Industries by Subindustry, as defined by Global Industry Classification Standard (GICS)

GICS Code	GICS Subindustry Name	Number Cos.	% of Cos. with GW	GW/TA	GWI/GW	% of Cos. with GW that Recorded GWI	Goodwill Impairment (\$ in millions)*	Market-to-Book Ratio
Industrials (continued)								
20201010	Commercial Printing	18	39%	22.1%	4.0%	42.9%	\$123	2.2
20201050	Environmental and Facilities Services	119	20%	36.3%	0.6%	33.3%	\$187	2.1
20201060	Office Services and Supplies	31	45%	18.0%	5.3%	21.4%	\$308	2.2
20201070	Diversified Support Services	46	30%	30.8%	–	–	–	2.4
20201080	Security and Alarm Services	11	27%	14.4%	–	–	–	12.5
20202010	Human Resource and Employment Services	44	41%	15.8%	1.0%	16.7%	\$43	2.2
20202020	Research and Consulting Services	78	31%	47.5%	2.4%	25.0%	\$361	2.6
20301010	Air Freight and Logistics	24	54%	14.3%	–	–	–	3.1
20302010	Airlines	15	40%	10.3%	–	–	–	2.3
20303010	Marine	6	33%	16.1%	1.0%	50.0%	\$9	1.6
20304010	Railroads	9	33%	0.8%	–	–	–	2.5
20304020	Trucking	33	42%	7.5%	0.2%	7.1%	\$4	2.3
20305010	Airport Services	4	50%	25.6%	–	–	–	1.3
20305020	Highways and Railtracks	1	–	–	–	–	–	–
20305030	Marine Ports and Services	5	–	–	–	–	–	4.4
Consumer Discretionary							\$9,296 (industry total)	
25101010	Auto Parts and Equipment	77	31%	10.5%	0.2%	4.2%	\$11	2.6
25101020	Tires and Rubber	3	67%	3.3%	–	–	–	1.6
25102010	Automobile Manufacturers	18	28%	0.2%	4.9%	20.0%	\$58	3.9
25102020	Motorcycle Manufacturers	8	13%	0.6%	–	–	–	4.3
25201010	Consumer Electronics	30	13%	8.2%	0.0%	25.0%	\$0	3.1
25201020	Home Furnishings	18	50%	19.6%	0.0%	11.1%	\$1	2.0
25201030	Homebuilding	37	46%	3.0%	–	–	–	1.4
25201040	Household Appliances	21	19%	15.0%	–	–	–	2.9
25201050	Housewares and Specialties	11	64%	29.8%	1.4%	42.9%	\$143	1.8
25202010	Leisure Products	51	33%	15.6%	3.3%	11.8%	\$152	2.5
25203010	Apparel, Accessories and Luxury Goods	64	31%	16.0%	7.9%	20.0%	\$768	1.5
25203020	Footwear	13	38%	2.2%	–	–	–	3.3
25203030	Textiles	6	50%	2.0%	–	–	–	1.8
25301010	Casinos and Gaming	51	41%	10.2%	0.5%	9.5%	\$53	2.8
25301020	Hotels, Resorts and Cruise Lines	37	27%	24.2%	–	–	–	3.7
25301030	Leisure Facilities	33	30%	18.3%	8.2%	40.0%	\$283	1.5
25301040	Restaurants	92	55%	15.5%	2.6%	13.7%	\$411	3.1
25302010	Education Services	47	40%	26.3%	0.3%	15.8%	\$22	1.7
25302020	Specialized Consumer Services	29	38%	20.8%	0.2%	9.1%	\$13	3.2
25401010	Advertising	73	16%	34.5%	0.4%	16.7%	\$47	2.2
25401020	Broadcasting	35	63%	28.2%	4.3%	31.8%	\$1,419	1.8
25401025	Cable and Satellite	17	53%	19.9%	0.2%	11.1%	\$133	2.8
25401030	Movies and Entertainment	119	21%	35.4%	0.3%	16.0%	\$197	2.2
25401040	Publishing	34	35%	20.3%	1.8%	25.0%	\$110	2.1
25501010	Distributors	50	14%	22.7%	–	–	–	4.0
25502020	Internet and Direct Marketing Retail	70	23%	16.7%	13.2%	25.0%	\$3,831	4.1
25503010	Department Stores	7	43%	6.8%	–	–	–	1.4
25503020	General Merchandise Stores	8	50%	14.3%	–	–	–	3.5

* Any differences in totals are due to rounding.

GOODWILL IMPAIRMENTS BY SUBINDUSTRY CALENDAR YEAR 2017

List of Industries by Subindustry, as defined by Global Industry Classification Standard (GICS)

GICS Code	GICS Subindustry Name	Number Cos.	% of Cos. with GW	GW/TA	GW/GW	% of Cos. with GW that Recorded GWI	Goodwill Impairment (\$ in millions)*	Market-to-Book Ratio
Consumer Discretionary (continued)								
25504010	Apparel Retail	48	35%	4.8%	23.5%	23.5%	\$877	1.8
25504020	Computer and Electronics Retail	8	38%	9.0%	1.5%	33.3%	\$33	2.1
25504030	Home Improvement Retail	9	56%	4.5%	–	–	–	8.7
25504040	Specialty Stores	37	43%	11.7%	11.5%	31.3%	\$698	1.3
25504050	Automotive Retail	27	48%	9.2%	0.0%	7.7%	\$4	2.6
25504060	Home Furnishing Retail	10	60%	12.1%	1.6%	16.7%	\$34	1.6
							\$1,791 (industry total)	
Consumer Staples								
30101010	Drug Retail	12	25%	22.6%	–	–	–	2.5
30101020	Food Distributors	23	35%	24.0%	2.7%	25.0%	\$248	2.4
30101030	Food Retail	17	47%	8.8%	5.2%	25.0%	\$290	1.7
30101040	Hypermarkets and Super Centers	3	67%	7.3%	–	–	–	3.8
30201010	Brewers	6	50%	27.1%	–	–	–	2.8
30201020	Distillers and Vintners	21	29%	34.3%	0.0%	16.7%	\$0	4.7
30201030	Soft Drinks	45	24%	15.7%	1.3%	18.2%	\$390	12.7
30202010	Agricultural Products	32	22%	8.4%	–	–	–	1.4
30202030	Packaged Foods and Meats	122	30%	33.2%	0.7%	21.6%	\$802	2.7
30203010	Tobacco	23	30%	14.4%	–	–	–	5.9
30301010	Household Products	25	48%	31.0%	0.0%	8.3%	\$11	5.0
30302010	Personal Products	137	14%	25.3%	0.4%	36.8%	\$50	2.8
							\$7,169 (industry total)	
Healthcare								
35101010	Healthcare Equipment	228	28%	35.3%	0.5%	9.4%	\$390	4.1
35101020	Healthcare Supplies	56	46%	31.1%	13.0%	19.2%	\$1,732	5.1
35102010	Healthcare Distributors	25	32%	20.1%	1.3%	25.0%	\$352	2.7
35102015	Healthcare Services	103	34%	46.1%	2.0%	37.1%	\$1,420	2.5
35102020	Healthcare Facilities	51	43%	27.7%	6.1%	45.5%	\$2,662	2.2
35102030	Managed Healthcare	20	55%	25.2%	0.5%	9.1%	\$434	3.4
35103010	Health Care Technology	83	29%	31.3%	0.6%	16.7%	\$37	3.5
35201010	Biotechnology	455	19%	14.2%	0.1%	4.7%	\$54	4.4
35202010	Pharmaceuticals	247	19%	24.0%	0.0%	8.3%	\$36	4.9
35203010	Life Sciences Tools and Services	50	52%	40.4%	0.1%	7.7%	\$51	4.8
							\$1,775 (industry total)	
Financials/Real Estate								
40101010	Diversified Banks	12	67%	1.9%	–	–	–	1.4
40101015	Regional Banks	673	48%	2.6%	0.4%	1.8%	\$357	1.4
40102010	Thrifts and Mortgage Finance	201	32%	0.1%	3.3%	3.1%	\$184	1.2
40201020	Other Diversified Financial Services	7	–	–	–	–	–	0.8
40201030	Multi-Sector Holdings	16	13%	10.9%	–	–	–	1.2
40201040	Specialized Finance	28	7%	0.2%	–	–	–	1.6
40202010	Consumer Finance	43	47%	2.1%	0.1%	10.0%	\$12	1.4
40203010	Asset Management and Custody Banks	123	9%	2.8%	–	–	–	4.3
40203020	Investment Banking and Brokerage	49	45%	1.1%	0.5%	9.1%	\$121	2.2
40203030	Diversified Capital Markets	1	–	–	–	–	–	1.2
40203040	Financial Exchanges & Data	21	71%	19.5%	–	–	–	5.2
40204010	Mortgage REITs	43	14%	0.2%	–	–	–	0.9

* Any differences in totals are due to rounding.

GOODWILL IMPAIRMENTS BY SUBINDUSTRY CALENDAR YEAR 2017

List of Industries by Subindustry, as defined by Global Industry Classification Standard (GICS)

GICS Code	GICS Subindustry Name	Number Cos.	% of Cos. with GW	GW/TA	GWI/GW	% of Cos. with GW that Recorded GWI	Goodwill Impairment (\$ in millions)*	Market-to-Book Ratio
Financials/Real Estate (continued)								
40301010	Insurance Brokers	13	54%	39.8%	0.1%	14.3%	\$20	3.7
40301020	Life and Health Insurance	26	42%	0.5%	6.4%	18.2%	\$910	1.0
40301030	Multi-line Insurance	10	60%	0.3%	0.2%	16.7%	\$5	1.2
40301040	Property and Casualty Insurance	54	52%	2.8%	0.9%	3.6%	\$125	1.5
40301050	Reinsurance	4	50%	0.4%	–	–	–	1.1
60101010	Diversified REITs	3	33%	1.4%	–	–	–	0.9
60101020	Industrial REITs	–	–	–	–	–	–	–
60101030	Hotel and Resort REITs	3	33%	0.2%	–	–	–	1.3
60101040	Office REITs	3	33%	0.2%	–	–	–	1.3
60101050	Healthcare REITs	–	–	–	–	–	–	–
60101060	Residential REITs	4	25%	1.2%	–	–	–	1.5
60101070	Retail REITs	1	–	–	–	–	–	1.1
60101080	Specialized REITs	7	57%	17.6%	0.0%	25.0%	\$3	2.7
60102010	Diversified Real Estate Activities	15	7%	0.0%	–	–	–	1.9
60102020	Real Estate Operating Companies	54	2%	0.2%	0.5%	100.0%	\$0	1.9
60102030	Real Estate Development	34	–	–	93.5%	–	\$38	1.8
60102040	Real Estate Services	15	47%	32.9%	–	–	–	3.8
Information Technology							\$1,331 (industry total)	
45101010	Internet Software and Services	379	26%	16.4%	0.6%	11.3%	\$356	5.2
45102010	IT Consulting and Other Services	101	29%	28.9%	0.0%	10.3%	\$21	3.0
45102020	Data Processing and Outsourced Services	88	56%	26.3%	0.6%	12.2%	\$606	4.2
45103010	Application Software	233	32%	37.2%	0.2%	6.7%	\$75	5.7
45103020	Systems Software	76	36%	22.3%	0.1%	3.7%	\$90	5.4
45103030	Home Entertainment Software	22	23%	38.4%	–	–	–	7.9
45201020	Communications Equipment	114	32%	20.8%	0.0%	5.6%	\$14	2.0
45202030	Technology Hardware, Storage and Peripherals	73	27%	8.6%	0.1%	15.0%	\$79	2.4
45203010	Electronic Equipment and Instruments	134	30%	32.0%	0.5%	12.5%	\$44	2.5
45203015	Electronic Components	31	45%	17.2%	–	–	–	2.3
45203020	Electronic Manufacturing Services	33	45%	5.1%	0.1%	6.7%	\$1	2.0
45203030	Technology Distributors	41	32%	14.8%	0.1%	7.7%	\$8	1.3
45301010	Semiconductor Equipment	48	50%	13.0%	0.4%	4.2%	\$35	2.5
45301020	Semiconductors	78	51%	18.3%	0.0%	5.0%	\$1	4.0
Telecommunications Services							\$4,851 (industry total)	
50101010	Alternative Carriers	44	16%	35.1%	–	–	–	4.9
50101020	Integrated Telecommunication Services	35	40%	19.5%	2.7%	14.3%	\$4,589	1.7
50102010	Wireless Telecommunication Services	23	30%	5.5%	2.8%	14.3%	\$262	1.7
Utilities							\$162 (industry total)	
55101010	Electric Utilities	33	52%	5.1%	0.1%	11.8%	\$46	1.9
55102010	Gas Utilities	17	59%	11.5%	0.0%	10.0%	\$1	2.3
55103010	Multi-Utilities	18	83%	4.8%	–	–	–	2.0
55104010	Water Utilities	27	22%	4.4%	–	–	–	2.9
55105010	Independent Power Producers and Energy Traders	12	42%	4.6%	2.4%	60.0%	\$115	1.5
55105020	Renewable Electricity	36	3%	0.1%	–	–	–	2.3

* Any differences in totals are due to rounding.

APPENDIX

COMPANY BASE SET SELECTION AND METHODOLOGY

The 2018 Study focused on financial data for U.S.-based publicly traded companies filing under U.S. GAAP. The primary sources of data for the 2018 Study were S&P Global's Capital IQ database, as well as individual company annual and interim financial reports.* †

The following procedures were used to arrive at the 2018 Study dataset, which was used to calculate all ratios and summary statistics throughout the 2018 Study.

- American Depositary Receipts (ADRs), exchange traded funds (ETFs), and Closed End Funds were excluded from S&P Global's Capital IQ database, leaving 8,475 U.S.-based, U.S.-traded companies as of January 8, 2018.
- From this set, further excluded were companies that either were identified as consolidated subsidiaries of other companies also within the dataset or were not deemed to be publicly traded U.S. firms in 2017, resulting in a base set of 8,406 companies.
- The current methodology was first applied in the 2015 Study. Compared to the prior methodology, it removed from the company selection process the requirement that companies have stock returns data over the prior 5-year period. The 5-years returns data selection criterion had been deemed relevant in previous studies, which were performed shortly after the financial crisis of 2008-2009. To bridge methodologies and allow for year-to-year comparisons, we created a 2013 pro forma year using the new selection methodology. Specifically, starting with the 2014 dataset of companies, we recalculated the 2013 goodwill impairments and accompanying metrics for the same company set; further adjustments were made as appropriate to arrive at the 2013 pro forma figures.‡
- Financial data for all companies in the 2018 Study was adjusted, when applicable, to a calendar year-end (rather than the most recent fiscal year-end) to examine impairments over a specific period of time, regardless of company-specific choices of fiscal year. Financial data was also adjusted to include goodwill impairment amounts disclosed within discontinued operations or disposal groups when identified.§

* S&P Global Market Intelligence; S&P Capital IQ database. S&P Global Market Intelligence is a division of S&P Global, Inc. Adjustments made to financial information contained in the S&P Capital IQ database and subsequent analytical procedures applied to the data were performed by Duff & Phelps. The information presented in this report has been obtained with the greatest of care from sources believed to be reliable but is not guaranteed to be complete, accurate or timely.

† The 2018 Study relies on the Global Industry Classification Standard (GICS®) structure as of the end of calendar year 2017 for industry classification purposes. Structure revisions that were enacted in September 2018 did not impact the 2018 Study.

‡ For example, to the extent companies in the 2014 dataset acquired companies previously included in the 2013 dataset, the latter would not show in the 2014 screening process. We therefore included the goodwill impairments taken by the respective acquirees in 2013 under the prior methodology in the 2013 pro forma amounts (approximately \$600 million). In addition, Citizens Financial Group's (Citizens) 2013 impairment of \$4.4 billion was excluded from the 2013 pro forma total because the company was a subsidiary of Royal Bank of Scotland in 2013 and did not trade publicly in the U.S. until 2014; thus, while Citizens is part of the 2014 dataset, it was a non-U.S. company in 2013. Separately, General Motors' (GM) goodwill impairment of \$541 million taken in 2013 was also excluded from the statistics as it did not meet the study criteria. The purpose of the studies is to report impairments of goodwill with economic substance, resulting from deterioration in economic conditions and/or operating performance. The GM charge pertains to goodwill with no economic basis, created upon GM's emergence from bankruptcy, as stated in the company's 2010 10-K filing. Furthermore, GM's impairment was strictly attributable to a reversal of a deferred tax asset valuation allowance related to this goodwill. The treatment of the 2013 GM impairment is also consistent with the treatment of GM impairments of the same nature in prior studies (e.g., \$27 billion in 2012). On a net basis, the various adjustments to 2013 resulted in adding \$800 million of goodwill impairment to the 2013 pro forma amounts compared to those reported for 2013 using the prior methodology.

§ Community Health Systems, Inc. reported one of the largest top 10 goodwill impairment events in 2017. In addition to the amount included in the 2018 Study for this company, there were significant goodwill impairment charges in 2017 related to businesses classified as held for sale. However, the company's financial statement disclosures were insufficient to isolate the amount of goodwill impairment from other asset impairments in those held-for-sale businesses. Therefore, the goodwill impairment captured in the 2018 Study for Community Health Systems, Inc. pertains only to its continuing operations.

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