ferf financial executives research foundation

DUFF & PHELPS

November 2016

2016 U.S. Goodwill Impairment Study

Introduction

Duff & Phelps and the Financial Executives Research Foundation (FERF) first published the results of their comprehensive Goodwill Impairment Study in 2009. This inaugural study examined U.S. publicly-traded companies' recognition of goodwill impairment at the height of the financial crisis (the end of 2008 and the beginning of 2009), and featured a comparative analysis of the goodwill impairments of over 5,000 companies (by industry), as well as the findings of a survey of Financial Executives International (FEI) members.

Now in its eighth year of publication, the 2016 U.S. Goodwill Impairment Study (the "2016 Study") continues to examine general and industry goodwill impairment trends of 8,500+ U.S. publicly-traded companies through December 2015. The 2016 Study also reports the results of this year's annual survey of FEI members, which continues to track the level of usage of the optional qualitative goodwill impairment test (a.k.a. "Step 0") by its members.

The accounting model for goodwill under U.S. GAAP is currently being simplified. The 2016 Study features an article by Erik Bradbury, FEI and FERF Professional Accounting Fellow, outlining a brief history of the existing goodwill impairment model, as well as the current status of FASB proposals to make changes to that model. This year's survey also asked FEI members their opinion on these proposed changes.

Inside

Introduction

Purpose of the 2016 Study

- To report and examine the general and industry trends of goodwill and goodwill impairment of U.S. companies.
- To report the 2016 results of the annual goodwill impairment survey of FEI members (the "2016 Survey").

Highlights of the 2016 Study

In 2015 we saw a year of opposites for U.S. publicly-traded companies.

On the one hand, 2015 was an extremely robust year for M&A activity, with deal value jumping by a staggering two-thirds relative to 2014.* This led to $458 billion of goodwill being added to U.S. companies' balance sheets, a record high since we began tracking this information in 2008.

On the other hand, the total goodwill impairment ("GWI") recorded by U.S. public companies increased more than twofold, from $26 billion in 2014 to $57 billion of in 2015, the highest level since 2008 at the height of the global financial crisis. Notably, the number of GWI events increased only slightly, from 341 to 350, for the same period. Therefore, average GWI per event more than doubled, from $75 million in 2014 to $163 million in 2015.

Diving deeper into the details, we find that 2015 was a challenging year for half of the ten industries analyzed. Industries that recorded an increase in GWI in 2015 include, in order of magnitude ($ billions)

- Energy ($5.8 to $18.2)
- Information Technology ($3.6 to $12.9)
- Consumer Discretionary ($2.8 to $7.6)
- Industrials ($3.5 to $7.7)
- Utilities ($0.2 to $2.3)

The remaining industries either saw minimal changes or recorded less GWI in 2015. Industries with declines included Financials, with a 55% plunge (from $3.1 to $1.4 billion), and Consumer Staples, with a 29% drop (from $3.5 to $2.5 billion).

Energy was the hardest-hit industry for two consecutive years. The amount of GWI in Energy more than tripled from 2014, while the number of events doubled from 32 to 65. Five of the top ten largest impairment events of 2015 were in Energy, once again a reflection of how deeply the industry suffered both in magnitude and number of GWI events. For perspective, by the end of 2015 Brent crude oil prices had sunk by 67% relative to their height in mid-2014, helping explain the hardship felt by Energy companies. Information Technology was also particularly affected, with aggregate GWI more than tripling from 2014, while also recording the top two impairments of 2015.

The increased 2015 aggregate impairment amount was also consistent with generally observed U.S. macroeconomic trends. The U.S. economic outlook was mixed in 2015, with healthy job growth and strong consumer spending counterbalanced by plunging energy prices that affected certain industries disproportionately.

GWI concentration in 2015 was similar to the 2014 results. The top three GWI events amounted to 20% (or $11.6 billion) of GWI totals in 2015, consistent with the 20% (or $5.3 billion) recorded in 2014.

Highlights of the 2016 Survey

The 2016 Survey continued to monitor FEI members' use of the optional qualitative test when testing goodwill for impairment (a.k.a. "Step 0"). The 2016 Survey demonstrates record use of the Step 0 test, and a steady increase since the option first became available. Specifically, 29% of public companies opted to use Step 0 in the 2013 Survey, with this proportion climbing to 43% in the 2014 Survey. The majority of public company respondents (54%) used Step 0 in the 2015 Survey, trending up to 59% in the 2016 Survey. Private companies show a similar trend, as they continue to embrace Step 0: 50% of respondents currently apply it, which is more than double the rate in the 2013 Survey (22%). In contrast, only 28% of all respondents prefer the quantitative test, consistent with results observed in the 2015 Survey.

FASB has proposed to simplify the goodwill impairment test by eliminating Step 2 and by computing any goodwill impairment based on the difference between the fair value and the carrying amount of the reporting unit. A significant proportion (82%) of respondents were in favor of the proposed change. For additional discussion on the proposal, refer to the special article **"Accounting for Goodwill: Regulatory Update"** starting on page 4.

2016 Study: Second Year of Expanded Company Base Set

We first expanded the company base set in 2015, using S&P Global's Capital IQ database as the primary source of data. The 2016 Study continues with this methodology. The primary difference in the current methodology compared to the prior one is that the selection process no longer requires companies to have stock return data over the previous 5-year period. This change expanded the universe to 8,500+ public companies. A detailed description of the 2016 Study methodology is included in the **Appendix**.

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.

*M&A Activity based on transactions closed in each year, where U.S. publicly-traded companies acquired a 50% or greater interest.

Goodwill Landscape

The graphic below captures the evolution of goodwill from 2013 to 2015. If one examines the below graphic from the top down, the source of goodwill is provided with a deal summary (both number of deals and value) for transactions involving a controlling interest of 50% or more, acquired by U.S. incorporated publicly-traded companies [see M&A Activity].

Based on the above criteria, while deal activity saw a slight decrease in volume, there was a sizeable increase in deal value in 2015. Although the number of closed deals fell by 2%, the deal value jumped by a staggering two-thirds, leading to $458 billion of goodwill being added to U.S. companies' balance sheets in 2015 (compared to $157 billion in 2014). In fact, goodwill added in 2015 is at a record high since we began tracking this information in 2008, reflecting an extremely robust year for M&A activity.

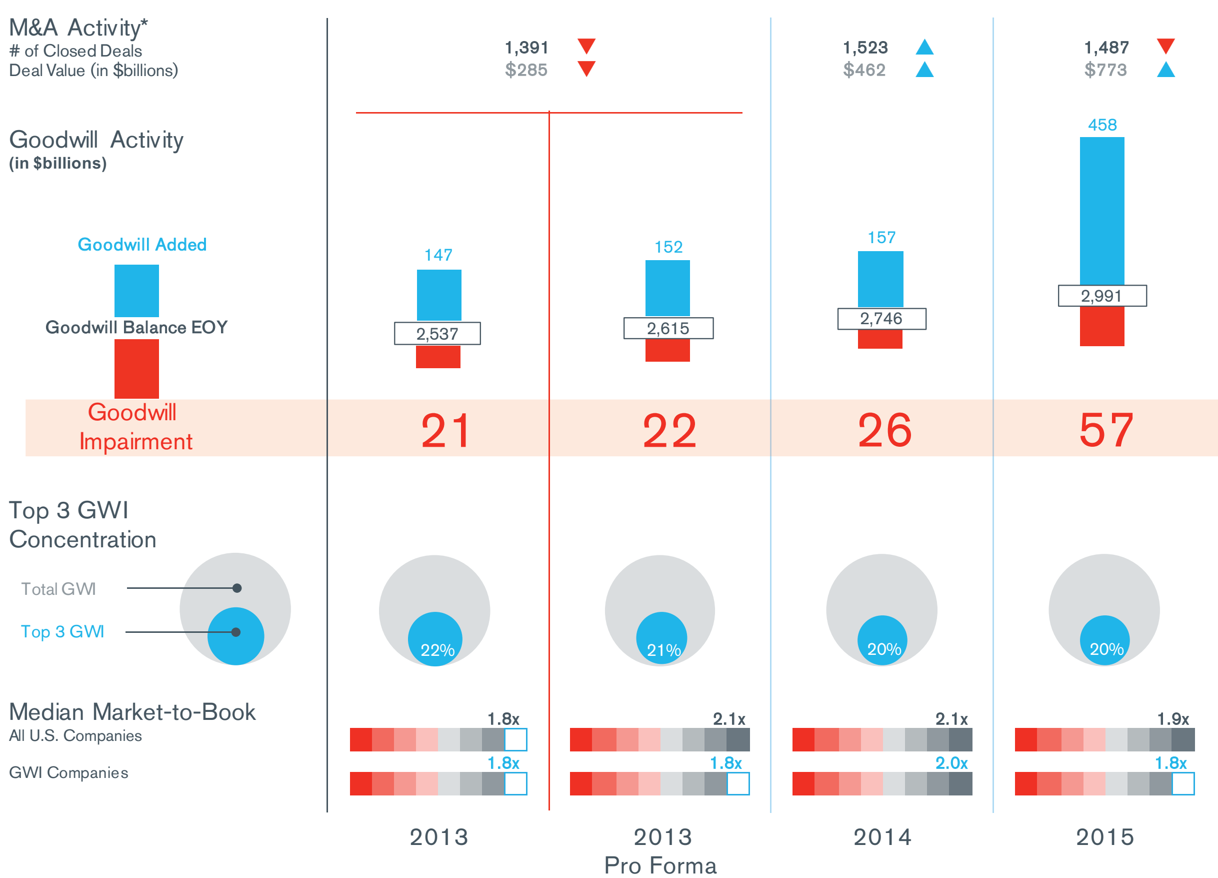
The Goodwill Activity bar chart shows the annual aggregate GWI (see amounts in the red font, shaded area), as well as the amount of goodwill added annually (see amounts in blue font), with the end-of-year (EOY) aggregate goodwill balance sliding along the scale.

For example, we can observe that goodwill impaired by U.S. companies more than doubled, from $26 billion in 2014 to $57 billion in 2015.

A limited number of events can have a dramatic impact on the annual impairment amounts. To provide some perspective, the graphic below highlights the concentration of GWI amounts recorded in the top three events [see Top 3 GWI Concentration, as shown in the middle panel]. The top three GWI events accounted for 20% of the 2015 aggregate GWI amount, similar to 2014.

While not a sole or definitive indicator of impairment, market capitalization should not be ignored during a goodwill impairment test. Market-to-book ratios for both the entirety of the 2016 Study as well as for those companies that recorded a GWI are also provided [see Median Market-to-Book in the bottom panel of the graphic].

Lastly, 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). For context, we also included a comparison of the 2013 figures originally reported in the 2014 Study to certain metrics based on the 2013 pro forma dataset.



*Source: S&P Global's Capital IQ. M&A Activity based on transactions closed in each year, where U.S. publicly-traded companies acquired a 50% or greater interest.

Accounting for Goodwill: Regulatory Update

By Erik Bradbury, Professional Accounting Fellow
Financial Executives International (FEI) and Financial Executives Research Foundation (FERF)

Determining whether to impair goodwill was considered to be challenging and costly for some organizations, which is why the Financial Accounting Standards Board (FASB) is proposing changes designed to help reduce that burden.

Goodwill Complexity

To understand the issues and potential complexity associated with goodwill impairment accounting, one has to consider the current model and its multiple steps.

According to current FASB standards, goodwill should not be amortized, but should be tested for impairment at the reporting unit level at least annually. Impairment of goodwill, in the financial reporting arena, is a condition that exists when the carrying amount of goodwill exceeds its implied fair value. To determine whether an impairment exists under U.S. GAAP, one has to walk through multiple steps (see **Current Test** graphic on page 5).

The model for determining impairment has evolved over time, and the FASB lessened the burden on preparers — for example, by adding a qualitative assessment in 2012.

Change on the Horizon

The accounting for goodwill impairment continues to be a topic of discussion, with possible changes to the model looming. In mid-October 2016, the Board made a tentative decision, in a 4-3 vote, to affirm proposals outlined in their May Exposure Draft (described on page 6) of a proposed Accounting Standard Update (ASU) on goodwill impairment *Intangibles—Goodwill and Other (Topic 350): Simplifying the Accounting for Goodwill Impairment*. The ASU would, among other measures, eliminate Step 2 completely from the goodwill impairment calculation (see **Proposed Test** graphic on page 5).

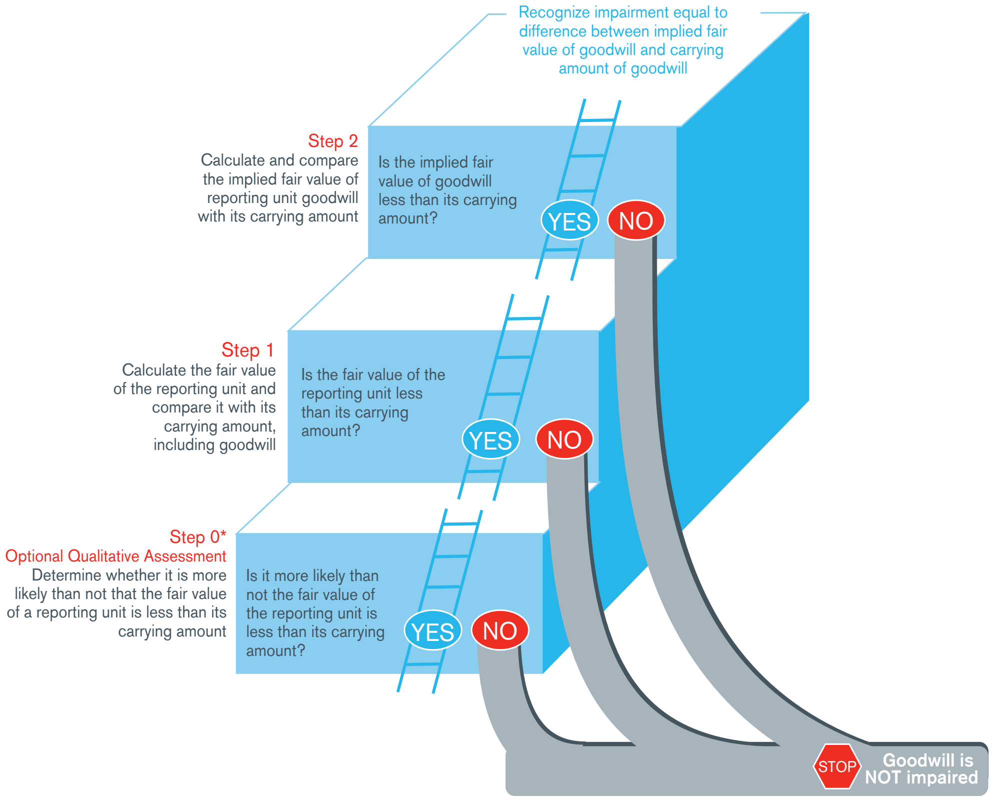
If affirmed by a final vote, there would no longer be an option or policy election to apply Step 2 and all entities would be required to record impairments based solely on the Step 1 test.

In addition, the Board also tentatively decided the following:

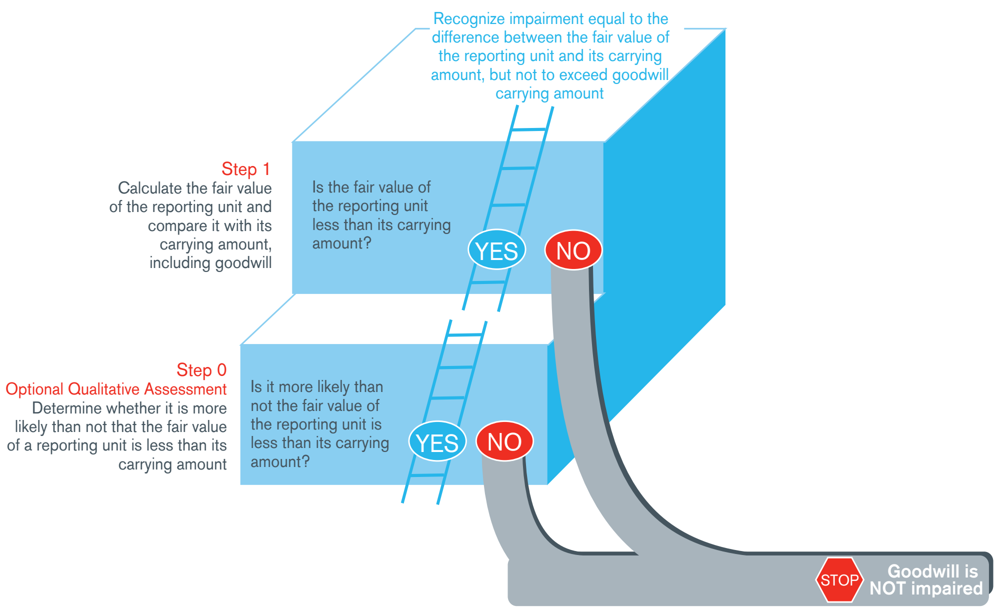
- Voted to affirm the Exposure Draft decision to require disclosure of any reporting units with zero or negative carrying amounts that have goodwill allocated to them, and the amounts of allocated goodwill.
- Voted to affirm its decision to apply the same one-step impairment test to all reporting units, including those with zero or negative carrying amounts.
- Voted to align the effective date (2020 for public companies, with early adoption allowed in 2017) of the revised standard with the new standard on credit losses (introduced by ASU 2016-13 - Financial Instruments—Credit Losses (Topic 326): *Measurement of Credit Losses on Financial Instruments*). The proposed guidance would be applied prospectively for existing goodwill.
- Decided to suspend deliberations on Phase 2 of the project, while evaluating the effectiveness of the Phase 1 changes (see page 6). The Board will continue to monitor the International Accounting Standards Board's projects on goodwill while leaving the project on its research agenda.

Accounting for Goodwill

Current Test



Proposed Test



*An entity has the unconditional option to skip the qualitative assessment and proceed directly to performing Step 1. However, an entity having a reporting unit with a zero or negative carrying amount would proceed directly to Step 2 if it determines, as a result of performing its required qualitative assessment, it is more likely than not that a goodwill impairment exists. To perform Step 2, an entity must calculate the fair value of a reporting unit.

Accounting for Goodwill

The Exposure Draft

The FASB's exposure draft was released in May 2016 as part of a multi-phased project intended to simplify the accounting for goodwill and to reduce costs for preparers.

The update was designed to change the way companies apply the current goodwill impairment guidance by removing Step 2 from the test. The removal of this step means preparers would no longer be required to conduct a hypothetical purchase price allocation to measure any goodwill impairment loss.

For example, under today's impairment test, if the fair value of a reporting unit is lower than its carrying amount (Step 1), an entity calculates any impairment charge by comparing the implied fair value of goodwill with its carrying amount (Step 2). The implied fair value of goodwill is calculated by deducting the fair value of all assets and liabilities of the reporting unit from the unit's fair value as determined in Step 1.

By eliminating Step 2 of this test, preparers would perform the annual, or any interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount, and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. However, that amount should not exceed the carrying amount of goodwill allocated to that reporting unit.

An entity would still have the option to perform the qualitative assessment for a reporting unit to determine if the quantitative impairment test is necessary.

The following table compares current reporting requirements with the FASB proposal.

Furthermore, the proposal would not change the timing of goodwill impairment testing (i.e., annual, or more frequently if there are triggering events), or the unit of account to which the test is applied (i.e., reporting units).

The proposal would apply to all entities except for private companies that have adopted the Private Company Council (PCC) goodwill accounting alternative (ASU 2014-02).

This proposal would also provide better alignment to International Financial Reporting Standards (IFRS), which also have a single-step quantitative impairment test. However, other differences would remain, primarily because IFRS uses the concept of a *recoverable amount*, which is the higher of *fair value less costs of disposal* and *value in use*, while the unit of account is the cash-generating unit (CGU) or group of CGUs.

When requesting feedback on the proposed update, the FASB also asked stakeholders whether Step 2 should remain under a policy election, and whether such an election should be made at the entity or reporting-unit level.

The Board has decided, preliminarily, to move any subsequent phase(s) of the project to its research agenda.

Current Requirements	FASB Proposal
Assess qualitative factors to determine whether a Step 1 test is necessary (often referred to as "Step 0")	No change
Step 1 – Identify potential impairment	Identify and measure impairment
Step 2 – Measure the impairment	Eliminated
Perform qualitative assessment to identify potential impairment for reporting units with zero or negative carrying amounts. Measure impairments under existing Step 2.	Entities would apply the same one-step impairment test to all reporting units, including those with zero or negative carrying amounts. Entities would disclose reporting units with zero or negative carrying amounts, and the amount of goodwill allocated to them.

Accounting for Goodwill

FEI Input

During the comment letter period for the proposal, which ended in July 2016, Financial Executive International's Committee on Corporate Reporting released its thoughts on the proposal. CCR monitors FASB activities on behalf of FEI members and its member companies represent approximately $5 trillion in market capitalization.

While supportive of the simplification, CCR members stated in their comment letter to FASB that there may be situations in which a company may wish to continue to perform Step 2 of the current impairment testing model based on specific facts and circumstances.

Retaining the current two-step model for impairment testing, but allowing a "Practical Expedient" election, would allow a company to forgo Step 2 and record goodwill impairment based on Step 1. Such an approach would allow companies to use their discretion when determining whether to incur the additional cost, time, and effort necessary to conduct a full impairment analysis and valuation under Step 2.

"The assessment of whether to forego the practical expedient and proceed to Step 2 is very fact-and-circumstances-driven and may be driven by differences between reporting units (i.e., due to the composition of the underlying net tangible and identifiable intangible assets) and over time (i.e., Step 2 may result in an impairment in one period and not another)," the CCR comment letter states.

"Presumably, requiring companies to avail themselves of the simplification opportunity via a policy election would lock them into an approach that doesn't make sense for all situations."

What's Next

The Board directed the staff to prepare a preballot draft of an ASU for Board and external fatal flaw review and to return at a future Board meeting to address (i) any issues arising from that review, (ii) the cost and benefit analysis, and (iii) permission to proceed with a draft for written ballot.

Members of FEI and its Professional Accounting staff will continue to monitor the proposed change closely.

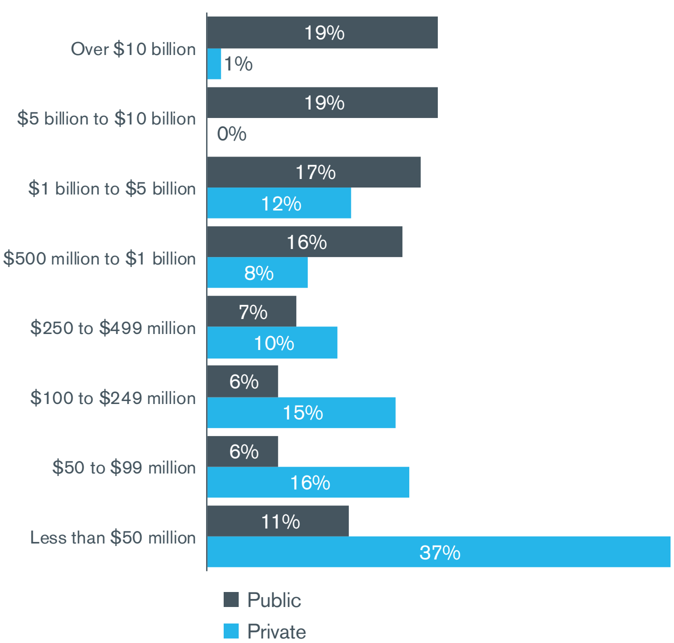
2016 Survey Results

During the summer of 2016, an electronic survey on goodwill impairments was conducted using a sample of FEI members representing both public and private companies. This survey is performed annually and provides insight into goodwill impairments and members' views on related topics.

The 2016 Survey demonstrates record use of the Step 0 test since the option first became available. Specifically, 29% of public companies opted to use Step 0 in the 2013 Survey and this proportion increased to 43% in the 2014 Survey. The majority of public company respondents (54%) used Step 0 in the 2015 Survey, trending up to 59% in the 2016 Survey. Private companies show a similar trend as they continue to embrace Step 0. Fifty percent of respondents currently apply Step 0, which is more than double the rate in the 2013 Survey (22%) (See Question 9).

FASB has proposed to simplify the goodwill impairment test by eliminating Step 2 and by computing any goodwill impairment based on the difference between the fair value and the carrying amount of the reporting unit. A significant proportion (82%) of respondents were in favor of the proposed change (see Question 13). See article "**Accounting for Goodwill: Regulatory Update"** on pages 4-7 for additional discussion on the proposal.

Question 2*: What is the revenue for your company?
(N=156)



* Totals may not foot due to rounding differences.

Approximately two-thirds of respondents believe that Step 0 meets its stated objective of reducing costs, which is comparable to the results in the 2015 Survey (see Question 11). It is also notable that 79% of those respondents that applied Step 0 passed the goodwill impairment test for those reporting units tested (see Question 10).

Question 1*: What is your company´s industry?
(N=156)

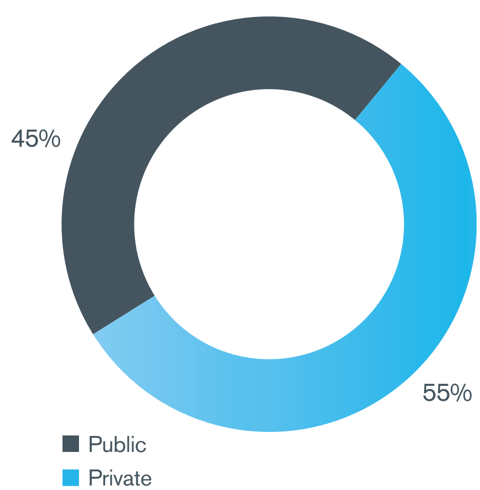
Public Company (70)

Industry	% of Total
Manufacturing	14%
Technology	11%
Consumer Goods	10%
Medical/Pharmaceutical	10%
Energy/Utilities/Oil & Gas	7%
Healthcare Services	4%
Retail	4%
Education	4%
Professional Services	3%
Banking/Financial Services	3%
Food/Restaurant	3%
High-Tech or Software	3%
Arts/Entertainment/Media	3%
Chemicals/Plastics	3%
Consulting/ Employment Agency	3%
Other (less than 2%)	14%

Private Company (86)

Industry	% of Total
Manufacturing	17%
Distribution	8%
Professional Services	7%
Insurance	7%
High-Tech or Software	7%
Technology	6%
Non-Profit Organizations	6%
Construction/Engineering	6%
Healthcare Services	5%
Retail	5%
Banking/Financial Services	3%
Service	3%
Energy/Utilities/Oil & Gas	2%
Real Estate	2%
Consulting/ Employment Agency	2%
Other (less than 2%)	13%

Question 3: Is your company public or private?
(N=156)



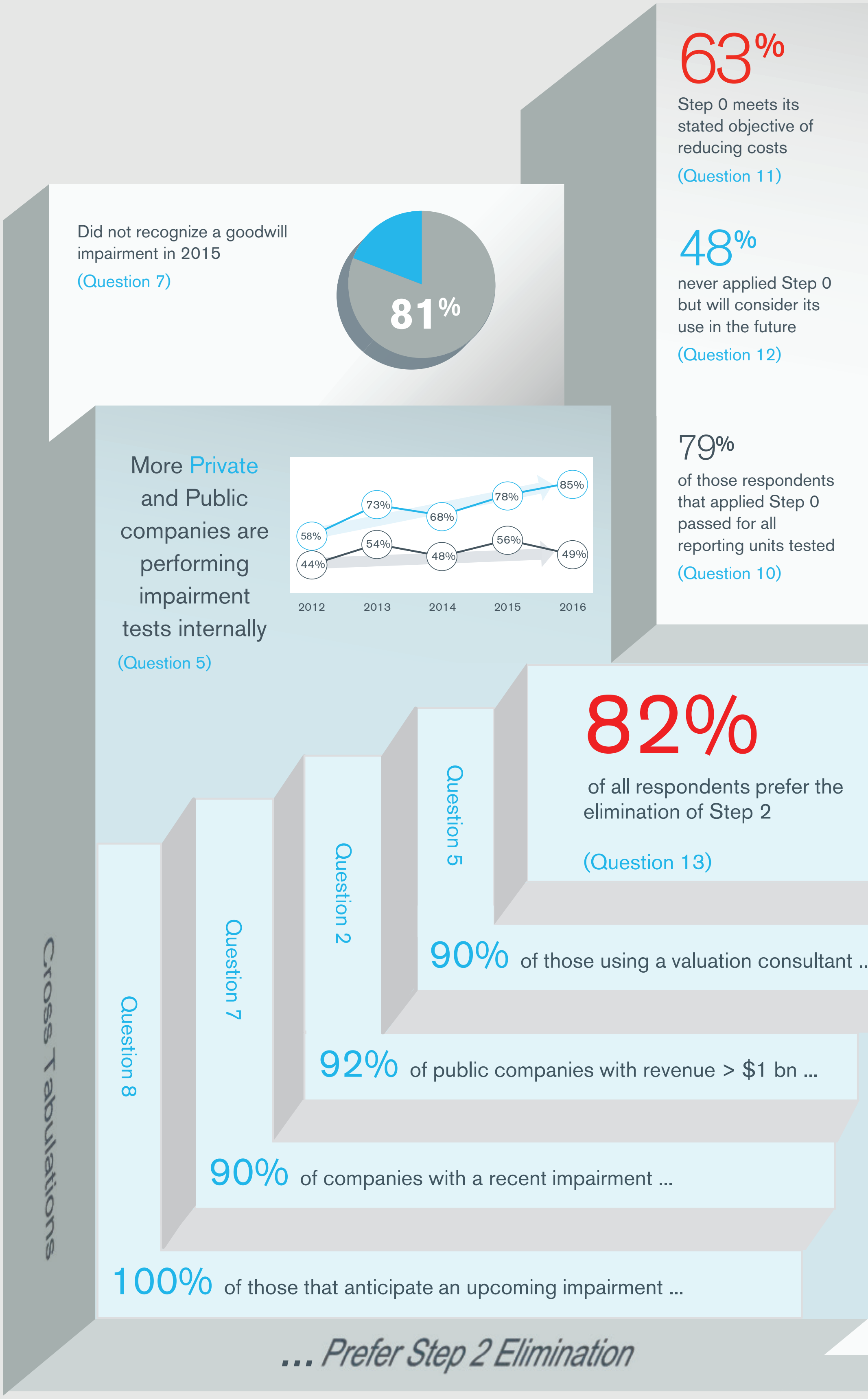
Goodwill Impairment
2016 Survey Results

Two-thirds of respondents believe that Step 0 meets its stated objective of reducing costs. In addition, nearly half of those that have never applied Step 0 will consider its use in the future. Both of these results are consistent with the 2015 Survey.

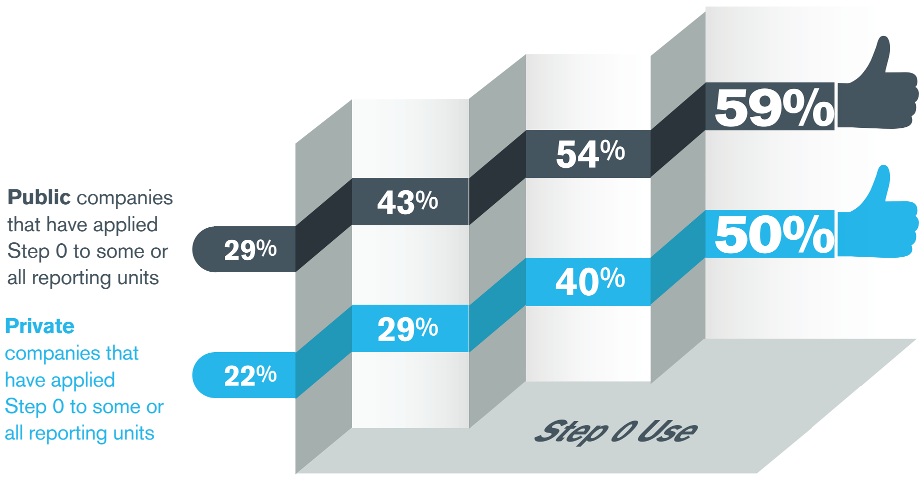
Each survey over the last five years has asked whether the respondent used a valuation consultant. The trend has shown a decline in the use of valuation consultants, more markedly so by private company respondents. Eighty-five percent of private companies and half of public company respondents performed the goodwill impairment test internally in the 2015 Survey.

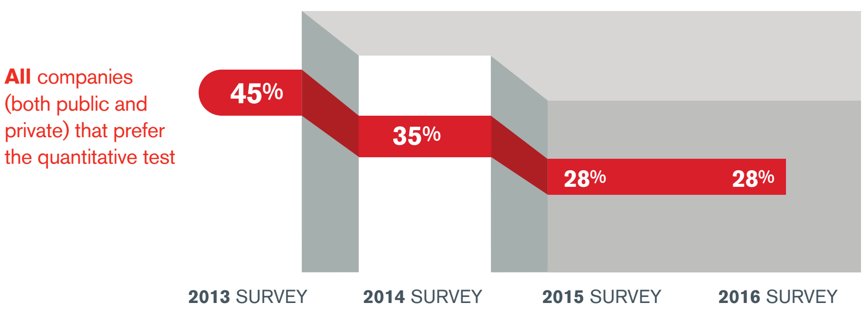
FASB has proposed to simplify the goodwill impairment test by eliminating Step 2 and by computing any goodwill impairment based on the difference between the fair value and the carrying amount of the reporting unit. A significant proportion (82%) of respondents were in favor of the proposed change.

Cross tabulations between Question 13, the preference to eliminate Step 2, and responses to other questions were also performed. The four steps to the right summarize some of the more notable outcomes. For example, the first step captures the following cross tabulation: 100% of those that anticipate an upcoming impairment (see Question 8) prefer Step 2 elimination (see Question 13).



Step 0 Use
(Question 9)





The 2016 Survey demonstrates record use of the Step 0 test since the option first became available. Specifically, 29% of public companies opted to use Step 0 in the 2013 Survey and this proportion increased to 43% in the 2014 Survey. The majority of public company respondents (54%) used Step 0 in the 2015 Survey, trending up to 59% in the 2016 Survey. Private companies show a similar trend as they continue to embrace Step 0. Fifty percent of respondents currently apply Step 0, which is more than double the rate in the 2013 Survey (22%).

SURVEY DEMOGRAPHICS

	Public (45%)			**Private** (55%)
Small	Medical/Pharmaceutical (4) Manufacturing (3) Technology (3)	32 Rev. <$1bn	46 Rev. <$100mm	Manufacturing (7) Non-Profit Organizations (5) High-Tech or Software (4) Professional Services (4) Technology (4)
Large	Manufacturing (7) Consumer Goods (5) Technology (5) Energy/Utilities/Oil & Gas (4)	38 Rev. >$1bn	40 Rev. >$100mm	Manufacturing (8) Distribution (6) Const./Engineering (4) Insurance (4)

156 Total Respondents

Survey Demographics

Manufacturing companies were prevalent in each of the four demographic groups, and technology companies were represented in three of the four groups. The breakpoint between small and large private companies was reduced to $100 million, down from $250 million in the 2015 Survey to provide for a more balanced distribution among the categories.

Survey responses are provided on the following two pages. Overall responses, as well as those of the four subsets of responders (small vs. large companies; public vs. private companies) have been detailed for additional insight into the views of these four groups.

2016 Survey Results*

	Public			Private			
	< $1bn	> $1bn	All Public	< $100mm	> $100mm	All Private	Overall
(4) How many reporting units do you have as of the most recent reporting period? (N = 156)							
1	34%	0%	16%	41%	23%	33%	25%
2 to 5	44%	45%	44%	28%	43%	35%	39%
6 to 10	9%	47%	30%	17%	28%	22%	26%
More than 10	13%	8%	10%	13%	8%	10%	10%
	100%	100%	100%	100%	100%	100%	100%
(5) Did you use a valuation consultant for your most recent goodwill impairment test or anticipate doing so for an upcoming test? (N = 156)							
Yes	47%	55%	51%	11%	20%	15%	31%
No	53%	45%	49%	89%	80%	85%	69%
	100%	100%	100%	100%	100%	100%	100%
(6) The AICPA published an Accounting and Valuation Guide, "Testing Goodwill for Impairment" in 2013 providing best practices guidance on this topic. Which of the following applies to you? (N = 154)							
The goodwill impairment testing process has been updated to incorporate this guidance	66%	42%	53%	29%	44%	36%	44%
We were comfortable with the testing process in place and have not updated it	19%	47%	34%	47%	38%	43%	39%
Not aware of this publication	16%	11%	13%	24%	18%	21%	18%
	100%	100%	100%	100%	100%	100%	100%
(7) Has your company recognized a goodwill impairment(s) during your most recent annual reporting period? (N = 155)							
Yes	19%	34%	27%	11%	13%	12%	19%
No	81%	66%	73%	89%	87%	88%	81%
	100%	100%	100%	100%	100%	100%	100%
(8) Do you anticipate any goodwill impairment(s) during an upcoming interim or annual test? (N = 154)							
Yes	13%	11%	12%	7%	18%	12%	12%
No	88%	89%	88%	93%	82%	88%	88%
	100%	100%	100%	100%	100%	100%	100%

* Totals may not foot due to rounding differences.

2016 Survey Results*

	Public			Private			
	< $1bn	> $1bn	All Public	< $100mm	> $100mm	All Private	Overall
(9) When performing goodwill impairment analyses, do you apply the optional qualitative assessment (Step 0)? (N = 150)							
Yes, for selected reporting units	6%	24%	16%	2%	8%	5%	10%
Yes, for all reporting units	38%	13%	24%	23%	32%	28%	26%
Yes, however we did not apply Step 0 in our most recent analysis because we refreshed our quantitative analysis	16%	18%	17%	7%	16%	11%	14%
Yes, however we did not apply Step 0 in our most recent analysis because we used a fair value indication from a recent transaction	3%	0%	1%	7%	5%	6%	4%
No, we prefer the quantitative test and proceed directly to Step 1	28%	29%	29%	28%	27%	28%	28%
No, Step 0 was considered but not applied due to lack of practical guidance	0%	5%	3%	16%	3%	10%	7%
No, Step 0 was considered but not deemed to be cost effective	9%	11%	10%	16%	8%	13%	11%
	100%	100%	100%	100%	100%	100%	100%
(10) For those reporting units to which you applied Step 0, did you conclude that: (N=72)							
There was no impairment for any of the reporting units tested under Step 0	75%	86%	79%	89%	68%	79%	79%
A Step 1 analysis was required for **some** reporting units	15%	14%	15%	5%	11%	8%	11%
A Step 1 analysis was required for **all** reporting units	10%	0%	6%	5%	21%	13%	10%
	100%	100%	100%	100%	100%	100%	100%
(11) Do you believe that the optional qualitative goodwill impairment assessment (Step 0) meets its stated objective of reducing costs? (N = 147)							
Yes	61%	58%	59%	60%	75%	67%	63%
No	39%	42%	41%	40%	25%	33%	37%
	100%	100%	100%	100%	100%	100%	100%
(12) If you have never applied Step 0 to any reporting units, will you be considering its use in future periods? (N = 66)							
Yes	18%	56%	41%	56%	50%	54%	48%
No	82%	44%	59%	44%	50%	46%	52%
	100%	100%	100%	100%	100%	100%	100%
(13) FASB has proposed to simplify the goodwill impairment test by eliminating Step 2 and by computing the goodwill impairment, if any, based on the difference between the fair value and the carrying amount of the reporting unit. Are you in favor of the proposed change? (N = 150)							
Yes	78%	92%	86%	82%	75%	79%	82%
No	22%	8%	14%	18%	25%	21%	18%
	100%	100%	100%	100%	100%	100%	100%

* Totals may not foot due to rounding differences.

Summary Statistics by Industry

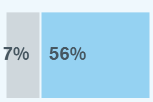
(Table 1)

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 2015. For example, Energy tops the list with its $18.2 billion aggregate impairment.

Additionally, the graphs on the right in Table 1 provide for 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:

17% of Energy companies carried goodwill in 2015



56% of those companies recorded an impairment.

In light of the dataset expansion introduced in the 2015 Study, a "2013 Pro Forma" column is included in Table 1 to provide a basis for comparison to the dataset for subsequent years. (Refer to the **Appendix** for a description of the 2016 Study methodology.)

Goodwill Impairments

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

Overall, the total GWI increased more than twofold, from $25.7 billion in 2014 to $56.9 billion in 2015, the highest level since 2008, at the height of the global financial crisis. However, the number of GWI events increased only slightly, from 341 to 350, for the same period. Thus, average GWI per event more than doubled, from $75 million in 2014 to $163 million in 2015. However, the top four industries represented over 80% of the 2015 total GWI amount. Energy alone accounted for nearly one-third of the aggregate GWI in 2015.

In general, 2015 was a challenging year for half of the ten industries analyzed. Industries that recorded a marked increase in GWI, in order of magnitude, include ($ billions):

- Energy ($5.8 to $18.2)
- Information Technology ($3.6 to $12.9)
- Consumer Discretionary ($2.8 to $7.6)
- Industrials ($3.5 to $7.7)
- Utilities ($0.2 to $2.3)

The remaining industries either saw minimal changes or recorded less GWI in 2015. Industries with declines included Financials, with a 55% plunge (from $3.1 to $1.4 billion), and Consumer Staples, with a 29% drop (from $3.5 to $2.5 billion).

Energy was the hardest-hit industry two years in a row: the amount of GWI more than tripled from 2014, while the number of events doubled from 32 to 65. Two of the top three largest 2015 impairment events took place in Information Technology. Nevertheless, five of the top ten events occurred in Energy, once again a reflection of how deeply the industry suffered both in magnitude of GWI and number of events. In fact, the 2015 top five Energy impairments ($7.0 billion) in aggregate eclipsed the entire industry total for 2014.

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. Over the last three years, approximately one-third of U.S. companies in the dataset have carried some amount of goodwill on their balance sheets.‡ Not surprisingly, the collapse in oil prices since mid-2014 through early 2016 had a broad and material impact in the Energy industry. The resulting surge in the magnitude and number of impairment events led to a notable decline in the proportion of Energy companies carrying goodwill in 2015 (from 20% to 17.1%). Industries seeing noteworthy increases in 2015 in companies carrying goodwill included Utilities (from 39.1% to 43.0%) and Financials (from 35.1% to 37.4%).

Percent with Goodwill Recording 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.

In 2015, Energy topped the list for the second consecutive year as the industry with the highest proportion of companies with goodwill recognizing a GWI. Just over 56% of Energy companies with goodwill recorded a GWI in 2015, with this metric more than doubling from the prior year. Notable decreases were observed in Telecommunication Services (from 8.6% to 3.1%) and Financials (from 7.7% to 4.4%). For the remaining industries, there was no notable change in this metric between 2014 and 2015.

* The information covering the period between 2012 and 2014 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.

‡ This proportion declined from approximately 43% in prior years due to the application of an enhanced methodology introduced with the 2015 Study. Of the 3,500 or so companies that were added based on the expanded selection criteria, only a small percentage carried goodwill.

2015 Goodwill Impairment
(Table 1)

Goodwill Impairments: $ billions (number of events)
Percent of Total Companies that Recorded GWI
Percent of Companies with Goodwill
Percent of Companies with Goodwill that Recorded GWI

2015 (Companies)	2012	2013	2013 Pro Forma	2014	2015	2015 Companies with GW	2015 Percent Recording GWI
Energy (679)	2.4 (11)	2.2 (14)	2.1 (19)	5.8 (32)	18.2 (65)	17%	56%
	3.5%	4.4%	2.7%	4.6%	9.6%		
	33.5%	32.1%	20.1%	20.0%	17.1%		
	10.5%	13.6%	13.6%	23.0%	56.0%		
Information Technology (1,487)	22.0 (53)	1.4 (45)	1.6 (58)	3.6 (66)	12.9 (65)	37%	12%
	6.5%	5.7%	3.8%	4.3%	4.4%		
	54.2%	53.7%	35.0%	36.2%	37.1%		
	12.0%	10.6%	10.8%	11.9%	11.8%		
Industrials (1,076)	6.5 (50)	3.0 (45)	3.2 (61)	3.5 (69)	7.7 (74)	40%	17%
	8.2%	7.4%	5.5%	6.2%	6.9%		
	60.2%	59.2%	39.3%	39.4%	40.3%		
	13.6%	12.4%	14.0%	15.8%	17.1%		
Consumer Discretionary (1,213)	4.5 (38)	2.9 (35)	3.1 (46)	2.8 (61)	7.6 (51)	35%	12%
	5.9%	5.7%	3.7%	4.9%	4.2%		
	51.9%	53.4%	34.3%	34.5%	35.0%		
	11.3%	10.6%	10.7%	14.1%	12.0%		
Materials (618)	3.6 (10)	4.5 (8)	4.6 (18)	2.7 (18)	2.8 (18)	20%	15%
	3.8%	2.9%	2.7%	2.7%	2.9%		
	43.5%	43.8%	20.2%	19.8%	19.9%		
	8.8%	6.7%	13.5%	13.8%	14.6%		
Consumer Staples (467)	1.3 (14)	1.0 (9)	1.0 (10)	3.5 (18)	2.5 (18)	26%	15%
	7.0%	4.6%	2.1%	3.9%	3.9%		
	48.3%	49.5%	24.6%	26.3%	25.7%		
	14.4%	9.4%	8.7%	14.6%	15.0%		
Utilities (151)	2.1 (4)	0.4 (2)	0.4 (3)	0.2 (5)	2.3 (6)	43%	9%
	4.0%	2.1%	1.9%	3.1%	4.0%		
	55.6%	56.7%	37.3%	39.1%	43.0%		
	7.3%	3.6%	5.0%	7.9%	9.2%		
Financials (1,462)	2.8 (24)	1.0 (13)	1.0 (22)	3.1 (40)	1.4 (24)	37%	4%
	1.6%	0.8%	1.5%	2.7%	1.6%		
	28.9%	29.4%	33.6%	35.1%	37.4%		
	5.4%	2.9%	4.4%	7.7%	4.4%		
Healthcare (1,252)	6.0 (28)	3.4 (21)	3.6 (34)	0.4 (29)	1.3 (28)	28%	8%
	4.4%	3.3%	2.7%	2.3%	2.2%		
	39.6%	41.0%	26.3%	27.6%	27.9%		
	11.1%	8.0%	10.4%	8.5%	8.0%		
Telecomm. Services (103)	0.1 (3)	1.1 (1)	1.1 (3)	0.1 (3)	0.1 (1)	31%	3%
	4.8%	1.7%	2.7%	2.7%	1.0%		
	55.6%	53.3%	34.5%	31.8%	31.1%		
	8.6%	3.1%	7.9%	8.6%	3.1%		
Total (8,508)	51.4 (235)	20.9 (193)	21.7 (274)	25.7 (341)	56.9 (350)	33%	13%
	4.5%	3.7%	3.1%	3.9%	4.1%		
	43.4%	43.4%	31.1%	31.9%	32.5%		
	10.5%	8.6%	10.1%	12.3%	12.7%		

Summary Statistics by Industry

(Table 2)

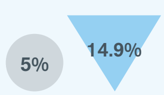
Table 1 captured the total amount of GWI and the frequency of events by industry. In Table 2, the focus shifts to the respective industries' (i) relative importance of goodwill to the overall asset base (goodwill intensity); (ii) magnitude of annual impairment relative to the carrying amount of goodwill; 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 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 2015 on the graphs on the right of Table 2. For example:

5% of the Energy industry asset base was made up of goodwill



14.9% of Energy's prior year goodwill was impaired.

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.

		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.
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.
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.

Goodwill Intensity

The *first row* in Table 2 illustrates Goodwill to Total Assets (GW/TA) reported over time for each industry, with 2015 specifically highlighted in the gray circle of the graphic displayed farthest on the right.

Aggregate goodwill as a percentage of total assets for U.S. companies (across all industries) has grown steadily since 2012 and exceeded 7% in 2015. This ratio can vary significantly by industry; for example, in 2015 it ranged from 1.6% for Financials to 26% for Healthcare.

Healthcare (which includes, but is not limited to, biotechnology and pharmaceutical companies) continued to exhibit the highest goodwill intensity during the period. Contributing factors include ongoing transaction activity as well as high growth expectations from future (yet-to-be-identified) technologies, which may make goodwill a significant component of an acquisition price.

Within each industry, goodwill intensity has been fairly stable over time and across datasets. Four industries exhibited a notable upward movement in 2015 when compared to 2014 (in order of magnitude):

- Healthcare (23% to 26%)
- Consumer Staples (20% to 22%)
- Industrials (16.5% to 17.9%)
- Materials (13.5% to 14.9%)

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 2015 metrics displayed in the triangle portion of the graphic located on the far right.

The total amount of impairment soared from $25.7 billion in 2014 to $56.9 billion in 2015, a rise of approximately $31.2 billion (Table 1). For the second consecutive year, Energy topped the table with the highest level of GWI, more than tripling from $5.8 to $18.2 billion in 2015. Energy accounted for nearly one-third of the aggregate GWI for 2015 and thus led to a jump in Energy's loss intensity factor, from 4.9% in 2014 to 14.9% in 2015. Aside from Energy, notable increases in GWI/GW were seen by Utilities (0.3% to 3.5%), Information Technology (0.9% to 2.7%), and Consumer Discretionary (0.9% to 2.4%). Four of the ten industries were either flat or experienced decreases in loss intensity relative to 2014.

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. Energy's 0.7% GWI/TA ratio was the largest of all industries in 2015, and marks a new high for any industry since 2012. The total for all industries has remained consistent at 0.1% during the period shown (2012-2015).

2015 Goodwill Impairment

(Table 2)

Sector 2015 (Companies)	Measure	2012	2013	2013 Pro Forma	2014	2015	2015 (GW/TA, GWI/GW)
Energy (679)	Goodwill Intensity (GW/TA)	4.4%	4.5%	5.0%	5.0%	5.0%	5%
	Loss Intensity (GWI/GW)	3.3%	2.2%	1.9%	4.9%	14.9%	14.9%
	Loss Intensity (GWI/TA)	0.1%	0.1%	0.1%	0.2%	0.7%	
Information Technology (1,487)	Goodwill Intensity (GW/TA)	18.4%	18.8%	18.6%	19.3%	19.9%	20%
	Loss Intensity (GWI/GW)	6.7%	0.4%	0.4%	0.9%	2.7%	2.7%
	Loss Intensity (GWI/TA)	1.3%	0.1%	0.1%	0.2%	0.5%	
Industrials (1,076)	Goodwill Intensity (GW/TA)	15.5%	16.2%	16.4%	16.5%	17.9%	18%
	Loss Intensity (GWI/GW)	1.9%	0.8%	0.8%	0.8%	1.9%	1.9%
	Loss Intensity (GWI/TA)	0.3%	0.1%	0.1%	0.1%	0.3%	
Consumer Discretionary (1,213)	Goodwill Intensity (GW/TA)	13.1%	14.2%	13.8%	13.6%	13.7%	14%
	Loss Intensity (GWI/GW)	2.0%	1.0%	1.1%	0.9%	2.4%	2.4%
	Loss Intensity (GWI/TA)	0.2%	0.1%	0.1%	0.1%	0.3%	
Materials (618)	Goodwill Intensity (GW/TA)	13.1%	12.8%	12.9%	13.5%	14.9%	15%
	Loss Intensity (GWI/GW)	3.8%	4.3%	4.5%	2.6%	2.6%	2.6%
	Loss Intensity (GWI/TA)	0.5%	0.6%	0.6%	0.3%	0.4%	
Consumer Staples (467)	Goodwill Intensity (GW/TA)	19.5%	20.1%	20.8%	20.0%	22.0%	22%
	Loss Intensity (GWI/GW)	0.5%	0.4%	0.4%	1.3%	0.9%	0.9%
	Loss Intensity (GWI/TA)	0.2%	0.1%	0.1%	0.3%	0.2%	
Utilities (151)	Goodwill Intensity (GW/TA)	5.0%	4.8%	4.8%	4.5%	4.5%	5%
	Loss Intensity (GWI/GW)	4.3%	0.6%	0.6%	0.3%	3.5%	3.5%
	Loss Intensity (GWI/TA)	0.2%	0.0%	0.0%	0.0%	0.2%	
Financials (1,462)	Goodwill Intensity (GW/TA)	1.7%	1.8%	1.6%	1.5%	1.6%	2%
	Loss Intensity (GWI/GW)	0.6%	0.2%	0.3%	0.8%	0.3%	0.3%
	Loss Intensity (GWI/TA)	0.0%	0.0%	0.0%	0.0%	0.0%	
Healthcare (1,252)	Goodwill Intensity (GW/TA)	23.5%	23.1%	22.9%	23.0%	26.0%	26%
	Loss Intensity (GWI/GW)	2.0%	0.9%	1.0%	0.1%	0.3%	0.3%
	Loss Intensity (GWI/TA)	0.4%	0.2%	0.2%	0.0%	0.1%	
Telecomm. Services (103)	Goodwill Intensity (GW/TA)	18.9%	18.7%	16.8%	17.9%	19.2%	19%
	Loss Intensity (GWI/GW)	0.1%	0.8%	0.8%	0.1%	0.1%	0.1%
	Loss Intensity (GWI/TA)	0.0%	0.2%	0.2%	0.0%	0.0%	
Total (8,508)	Goodwill Intensity (GW/TA)	6.0%	6.2%	6.3%	6.4%	7.0%	7%
	Loss Intensity (GWI/GW)	2.3%	0.8%	0.9%	1.0%	2.1%	2.1%
	Loss Intensity (GWI/TA)	0.1%	0.1%	0.1%	0.1%	0.1%	

Industry Spotlights

In contrast to Tables 1 and 2, the Industry Spotlights allow the reader a more in-depth look at the 2015 statistics for the respective industries.

Industry Spotlights cover ten industry sectors. They provide a focus on relevant metrics and statistics for the respective industries. Each spotlight displays a variety of data as well as the top three companies that recognized the highest amount of goodwill impairment for the year.

Highlights

Energy recognized $18.2 billion of GWI, making it the hardest hit industry two years in a row (2014 and 2015). The amount of GWI in 2015 more than tripled from $5.8 billion in 2014, while the number of events doubled, from 32 to 65. While two of the top three largest 2015 impairment events took place in Information Technology, five of the top ten events occurred in Energy, evidencing how deeply the industry has suffered both in magnitude and number of impairment events.

Information Technology had the largest net increase in goodwill during the 2014-2015 period, with approximately $122 billion being added and $17 billion impaired. Goodwill additions in Healthcare followed on a similar scale, in a testament to the robustness of M&A activity in these two industries over the two-year period.

Note that 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). For context, the graphic on the top right of each Spotlight displays data for calendar year 2013 under both the prior (2013) and the current methodology (2013 pro forma). The timeframe for the double arrow graphic on the top left of each Spotlight starts with 2013 pro forma data.

Market-to-Book Value

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 from 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 2013 pro forma and 2015, as well as the aggregate goodwill additions and impairments over that period.

Impairment History

Annual amounts and number of goodwill impairment events. To enable transitional comparisons, data for 2013 has been provided under both the prior methodology and the current methodology that expanded the dataset (2013 pro forma). The industry market-to-book ratio (red line) provides some context for the annual impairment measures, although it is not predictive in and of itself.

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 not predictive in and of itself, companies with a low market-to-book ratio would be at a greater risk of impairment.

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 2015 are depicted here and also in Tables 1 and 2.

Size of Industry

Represents the size of the industry relative to the combined size of all the companies included in the 2016 Study sample, measured in terms of market capitalization.

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 2011 would be worth at the end of the 2015.

Top 3 Industry Goodwill Impairments

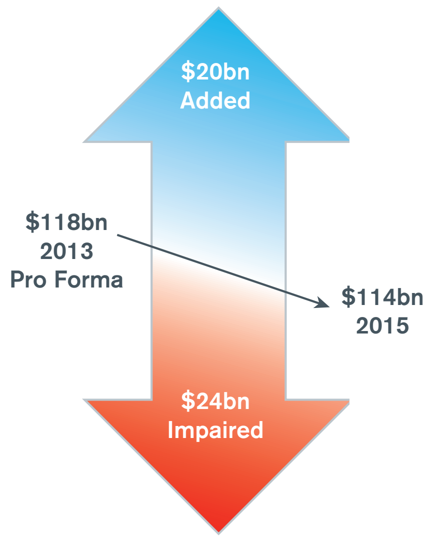
Highlights the top 3 impairments recorded in the industry during calendar year 2015.

2015 Industry Spotlight

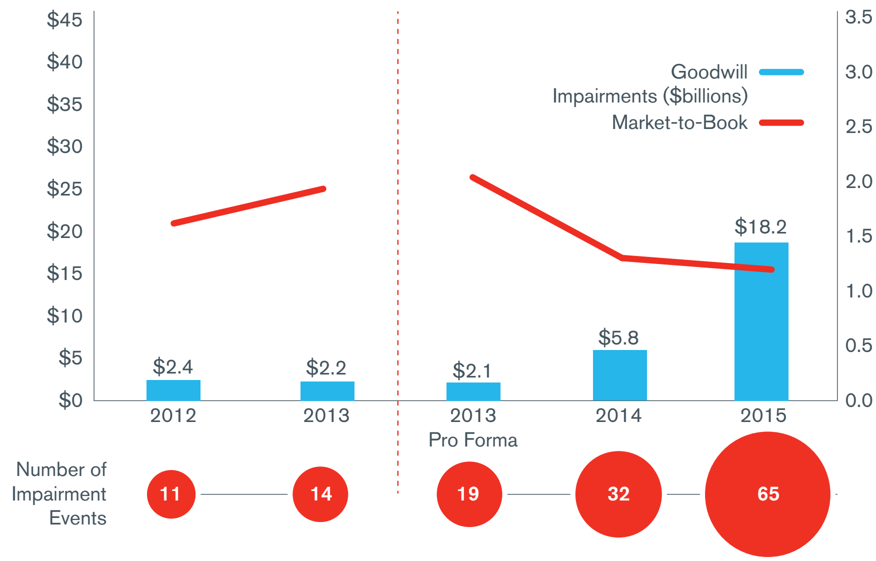
Energy

GICS Code 10

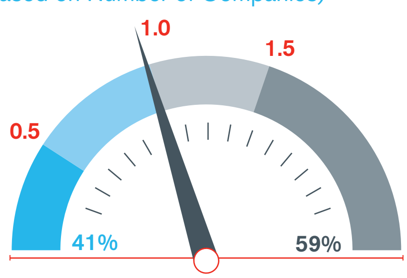
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

679
Companies

5.0%
Goodwill to Total Assets (GW/TA)

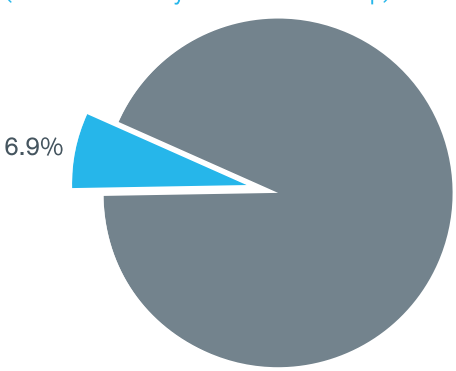
14.9%
Percent of Goodwill Impaired (GWI/GW ratio)

17.1%
Companies with Goodwill

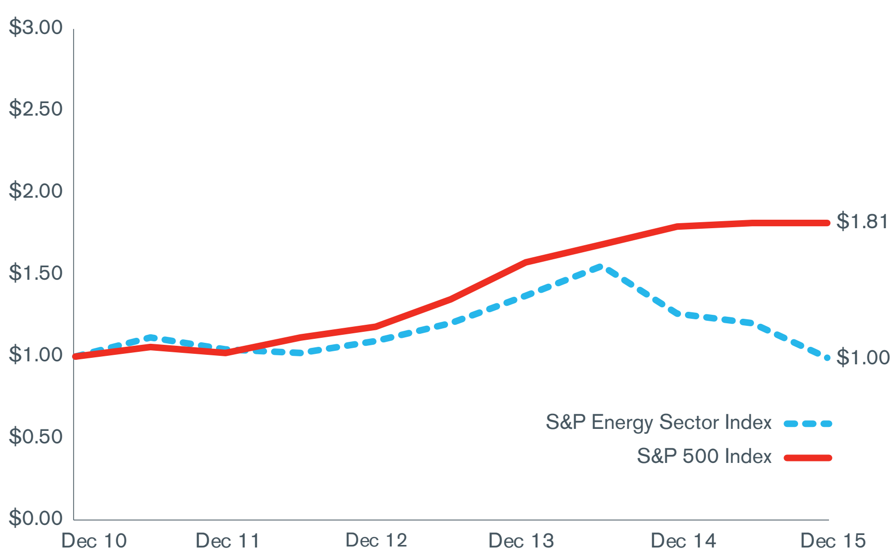
56.0%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

1.2
Market-to-Book Ratio (median)

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



Index (Year End 2010 = $1)



Top 3 Industry Goodwill Impairments

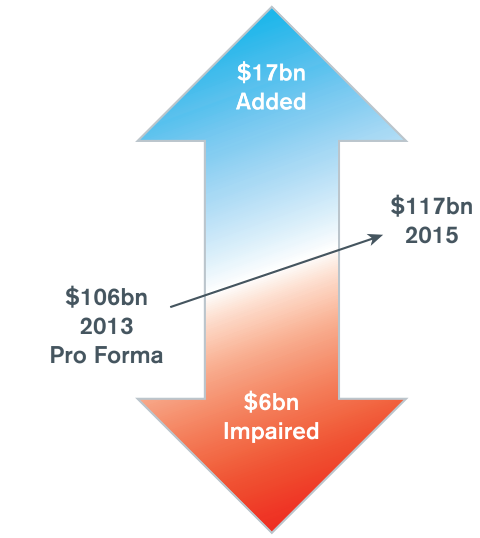
National Oilwell Varco, Inc.	$1,485 million
Hess Corporation	$1,483 million
Crestwood Equity Partners LP	$1,406 million

2015 Industry Spotlight

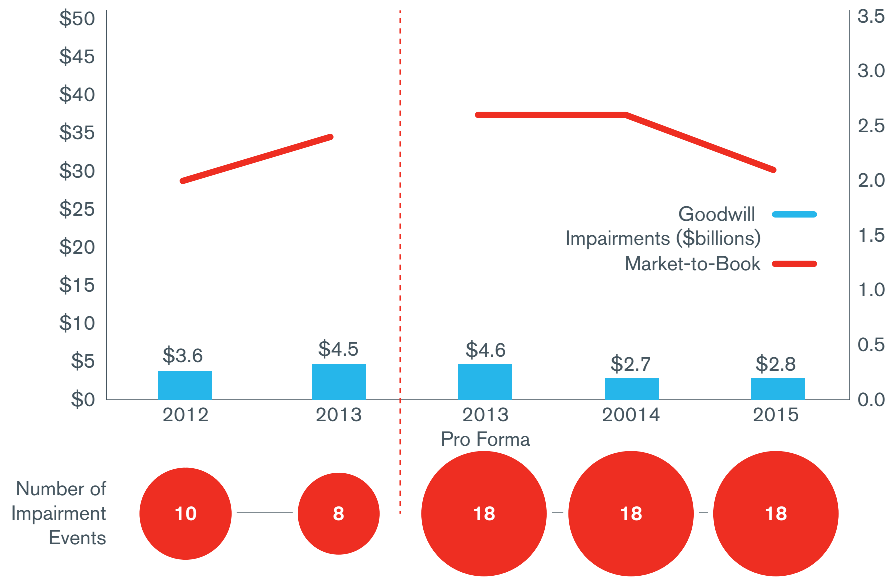
Materials

GICS Code 15

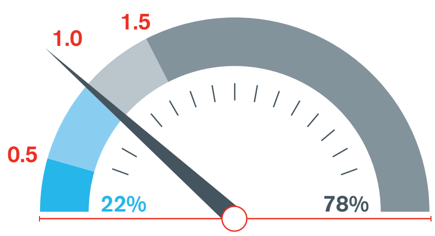
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

618
Companies

14.9%
Goodwill to Total Assets (GW/TA)

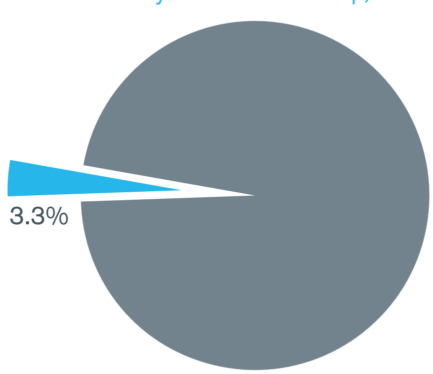
2.6%
Percent of Goodwill Impaired (GWI/GW ratio)

19.9%
Companies with Goodwill

14.6%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

2.1
Market-to-Book Ratio (median)

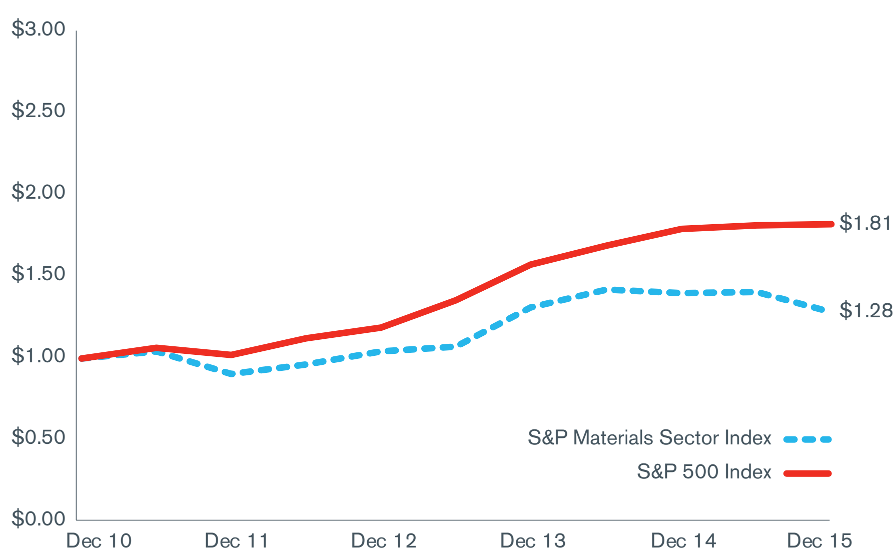
Size of Industry
(Relative to Study's Total Market Cap)



Top 3 Industry Goodwill Impairments

Axiall Corporation	$864 million
WestRock Company	$478 million
Cabot Corporation	$352 million

Index (Year End 2010 = $1)

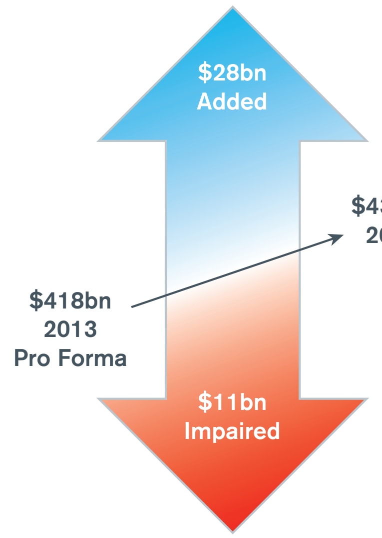


2015 Industry Spotlight

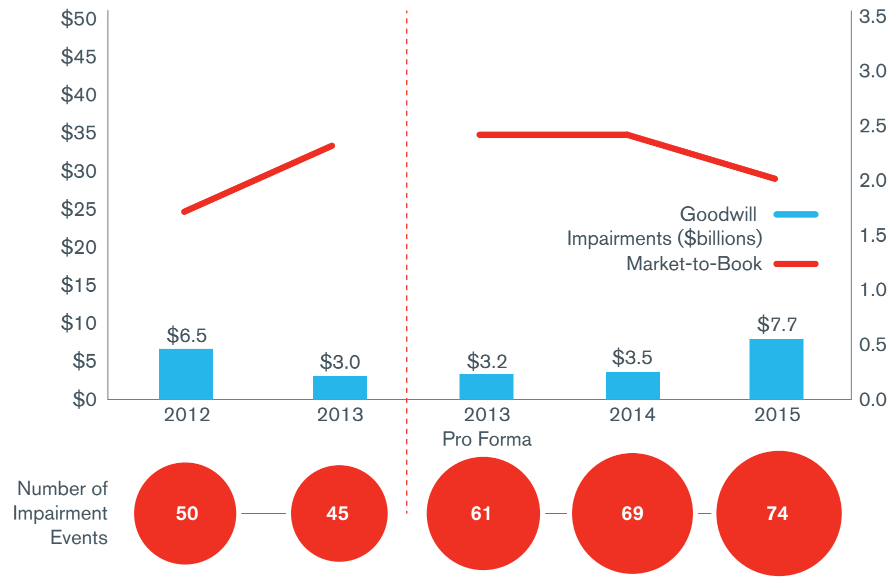
Industrials

GICS Code 20

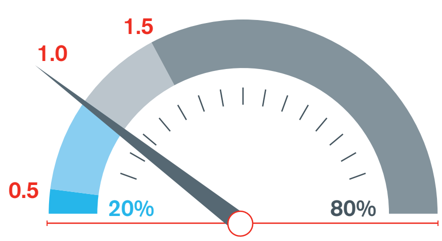
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

1,076
Companies

17.9%
Goodwill to Total Assets (GW/TA)

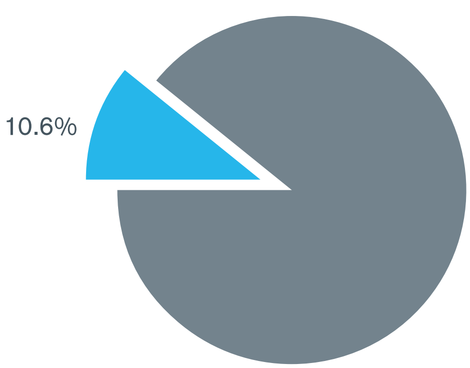
1.9%
Percent of Goodwill Impaired (GWI/GW ratio)

40.3%
Companies with Goodwill

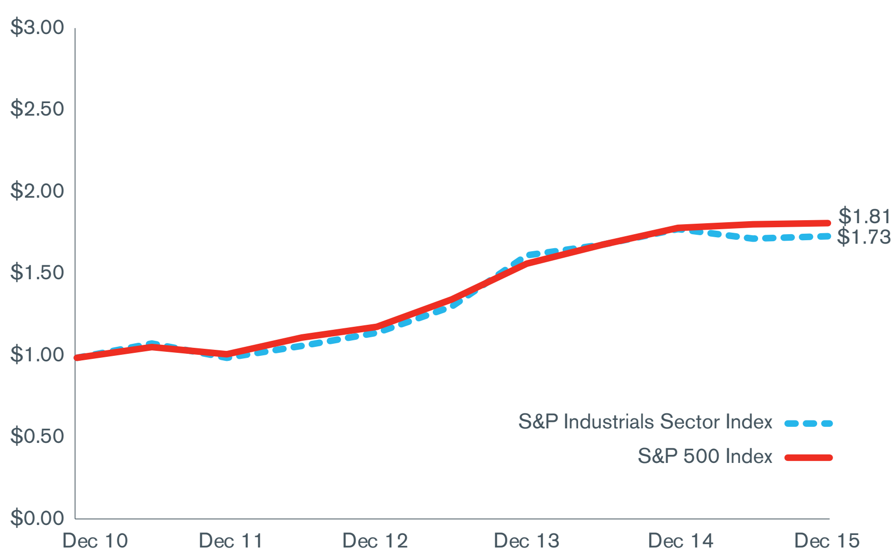
17.1%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

2.0
Market-to-Book Ratio (median)

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



Index (Year End 2010 = $1)



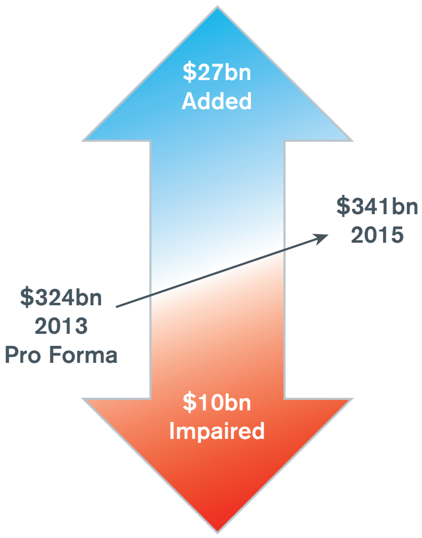
Top 3 Industry Goodwill Impairments

Joy Global, Inc.	$1,199 million
Quad/Graphics, Inc.	$808 million
Eagle Mountain Corporation	$604 million

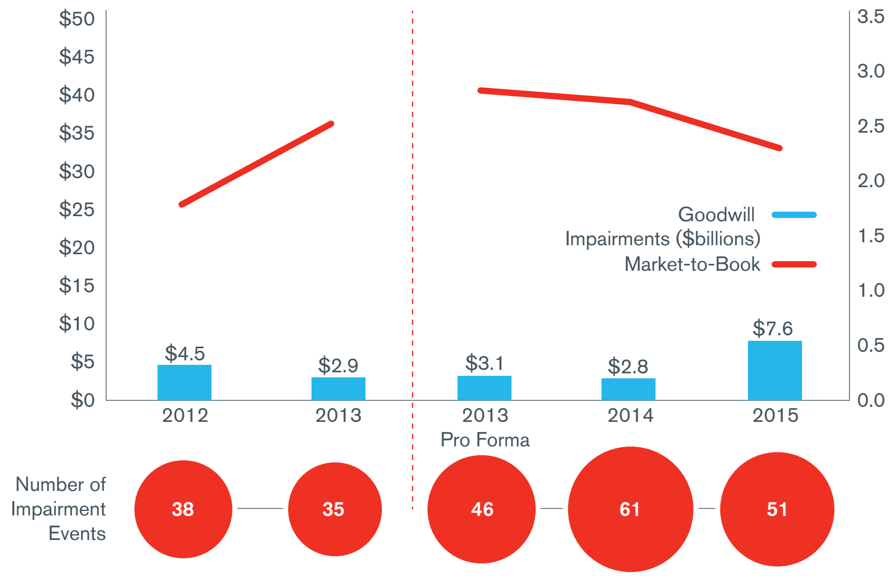
2015 Industry Spotlight — Consumer Discretionary

GICS Code 25

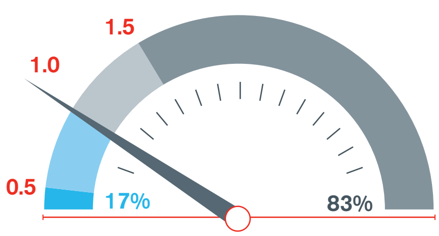
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

1,213
Companies

13.7%
Goodwill to Total Assets (GW/TA)

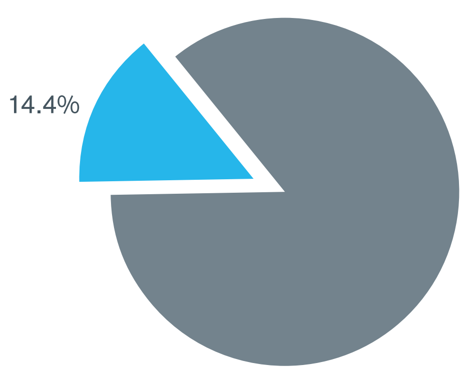
2.4%
Percent of Goodwill Impaired (GWI/GW ratio)

35.0%
Companies with Goodwill

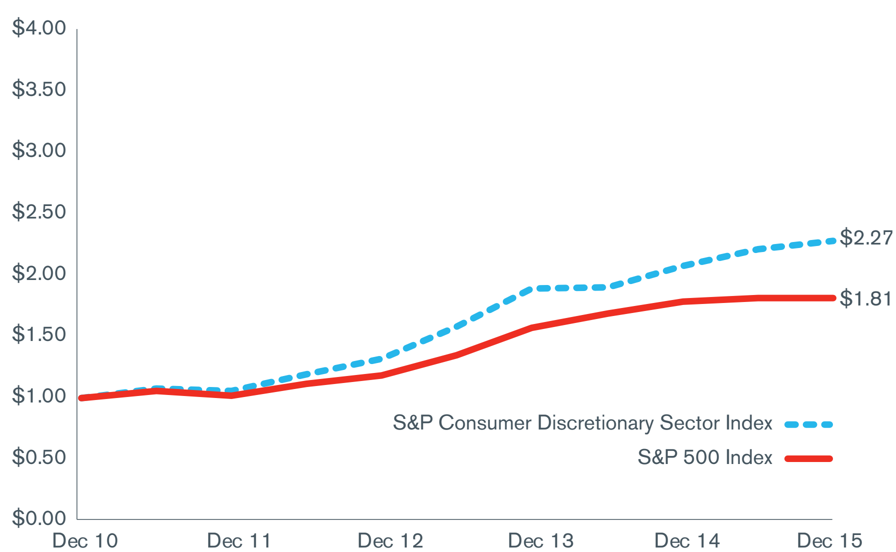
12.0%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

2.2
Market-to-Book Ratio (median)

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



Index (Year End 2010 = $1)



Top 3 Industry Goodwill Impairments

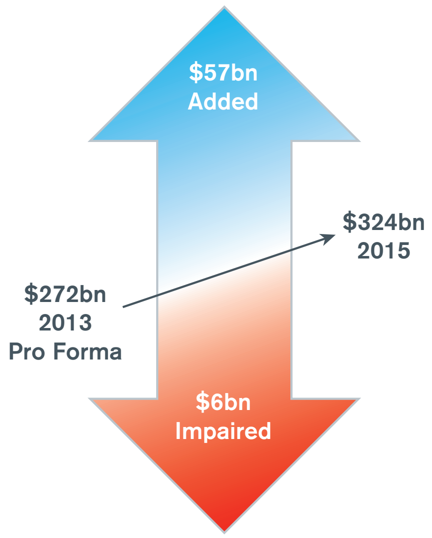
MGM Resorts International	$1,468 million
Rent-A-Center, Inc.	$1,170 million
Scientific Games Corporation	$1,003 million

2015 Industry Spotlight

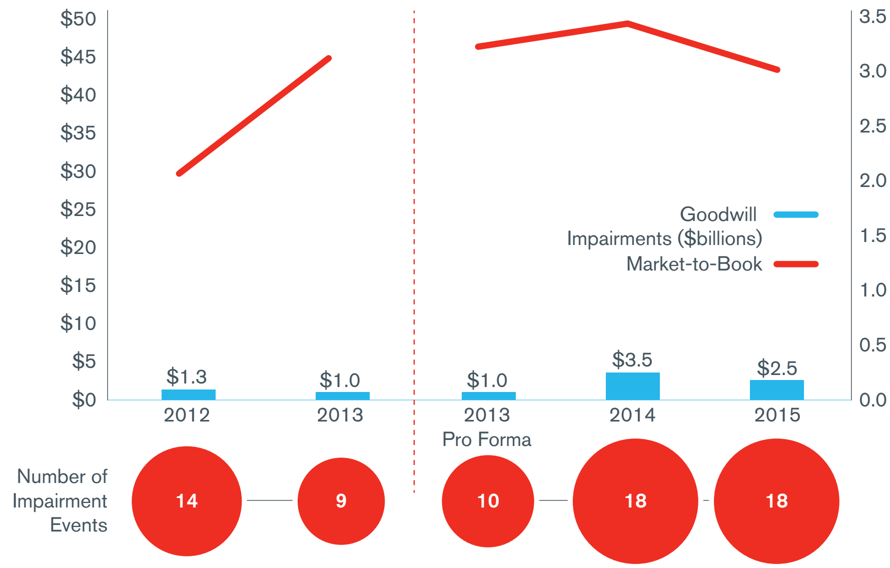
Consumer Staples

GICS Code 30

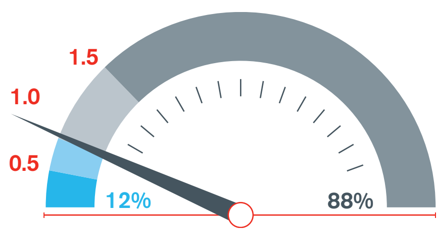
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

467
Companies

22.0%
Goodwill to Total Assets (GW/TA)

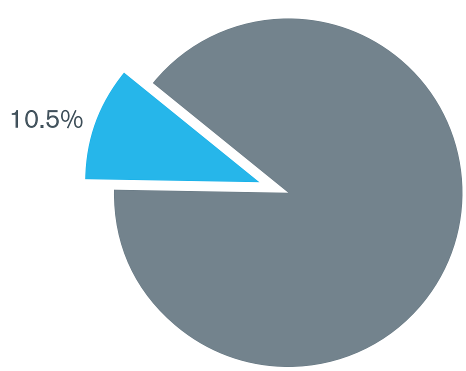
0.9%
Percent of Goodwill Impaired (GWI/GW ratio)

25.7%
Companies with Goodwill

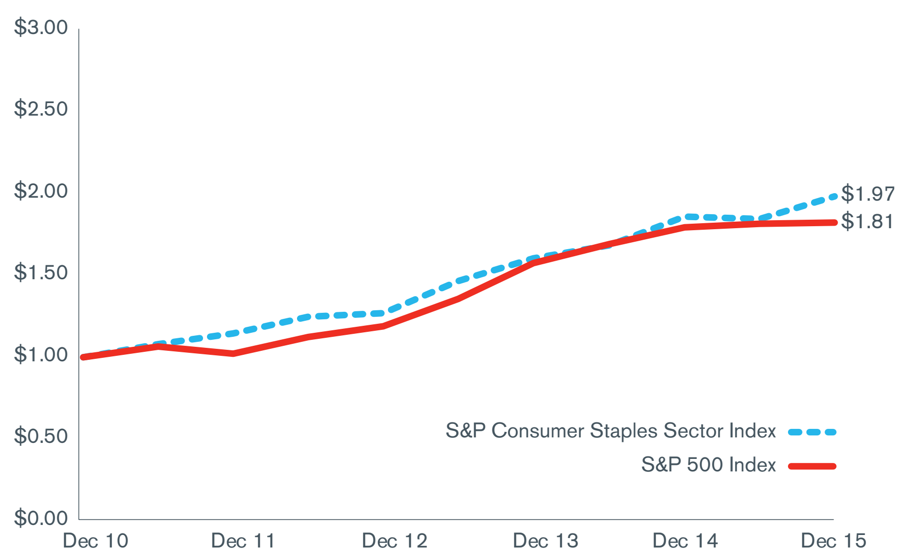
15.0%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

3.0
Market-to-Book Ratio (median)

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



Index (Year End 2010 = $1)



Top 3 Industry Goodwill Impairments

ConAgra Foods, Inc.	$1,999 million
The Hershey Company	$281 million
Post Holdings, Inc.	$57 million

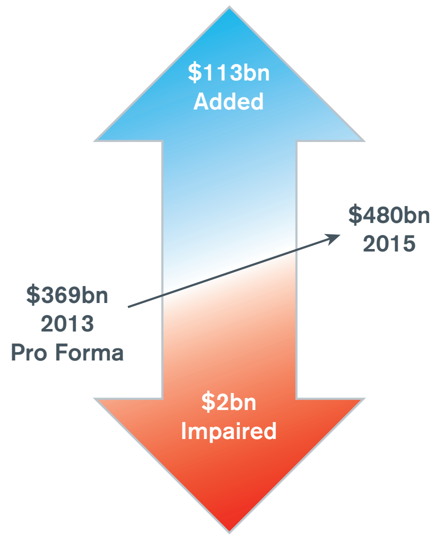
*The decrease in the amount of goodwill added is due to a combination of economic and industry factors (primarily due to the strength of the U.S. dollar in 2014 and industry divestitures).

2015 Industry Spotlight

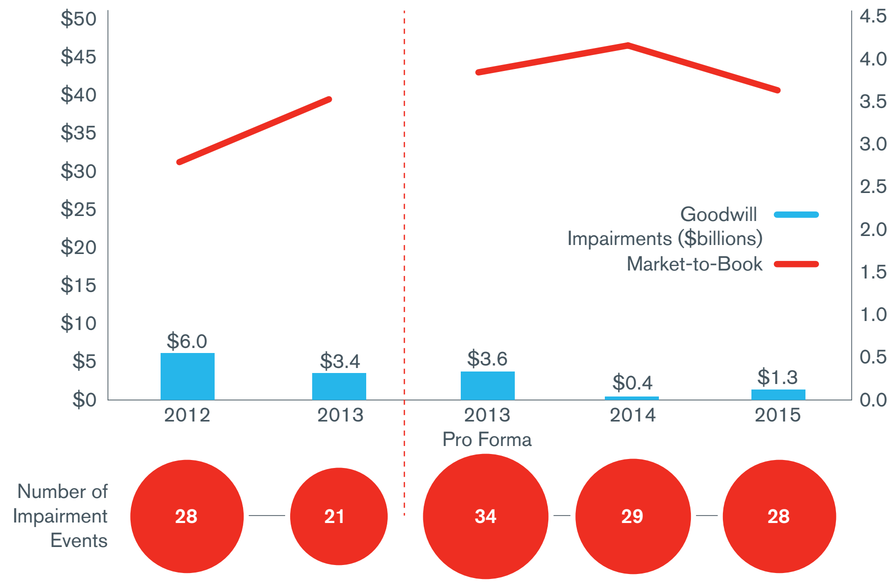
Healthcare

GICS Code 35

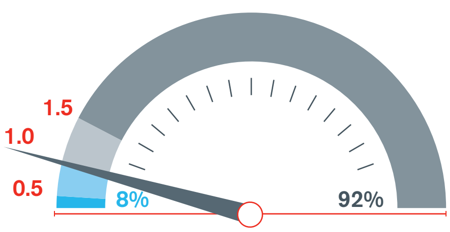
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

1,252
Companies

26.0%
Goodwill to Total Assets (GW/TA)

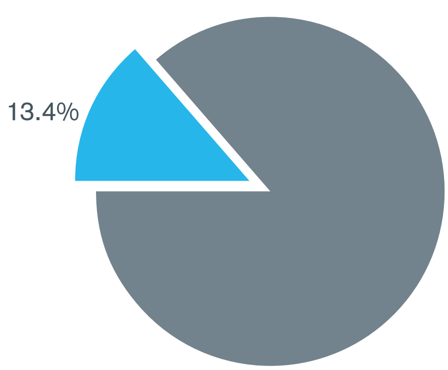
0.3%
Percent of Goodwill Impaired (GWI/GW ratio)

27.9%
Companies with Goodwill

8.0%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

3.6
Market-to-Book Ratio (median)

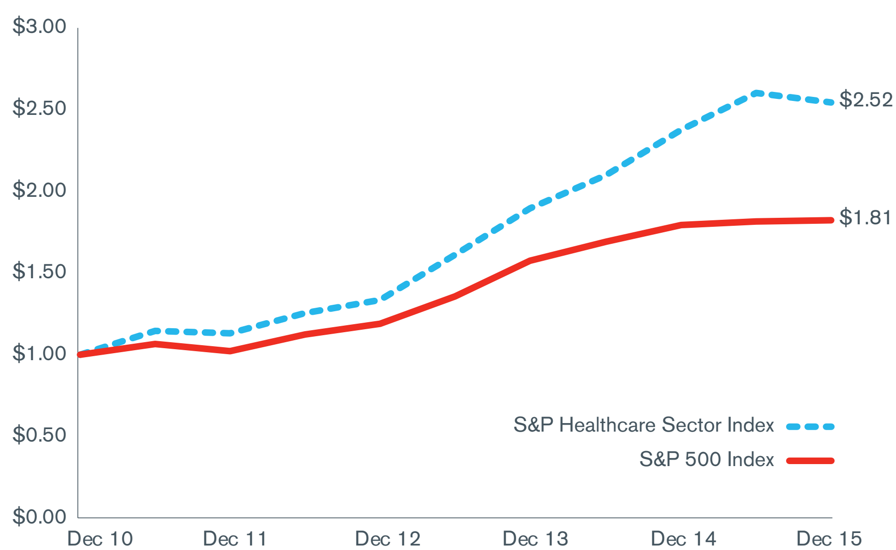
Size of Industry
(Relative to Study's Total Market Cap)



Top 3 Industry Goodwill Impairments

Halyard Health, Inc.	$474 million
BioScrip, Inc.	$252 million
DaVita, Inc.	$193 million

Index (Year End 2010 = $1)

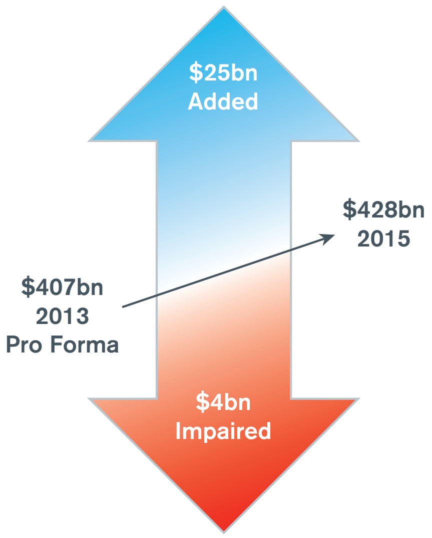


2015 Industry Spotlight

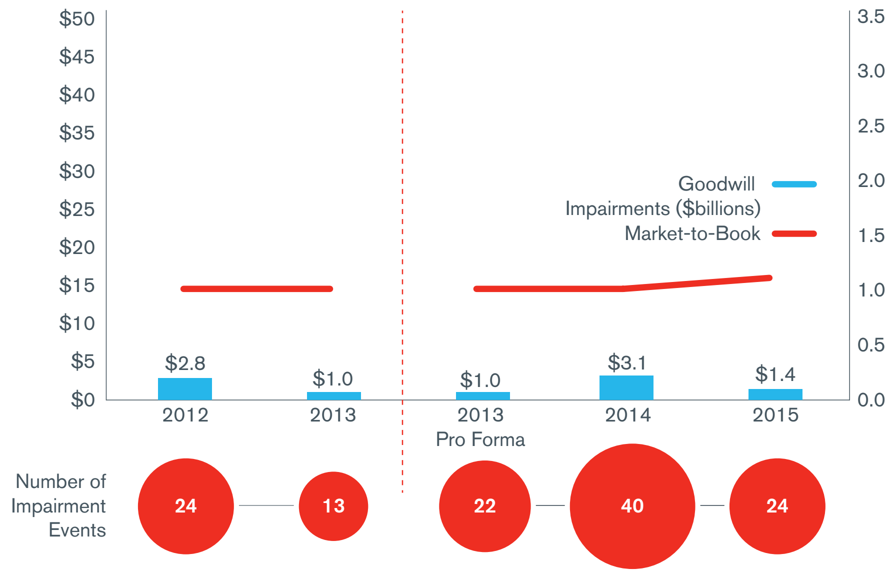
Financials

GICS Code 40

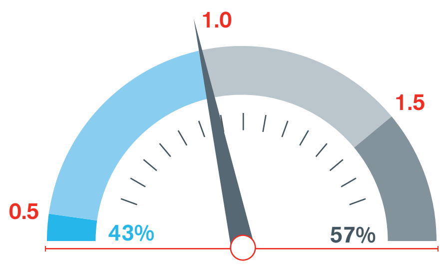
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

1,462
Companies

1.6%
Goodwill to Total Assets (GW/TA)

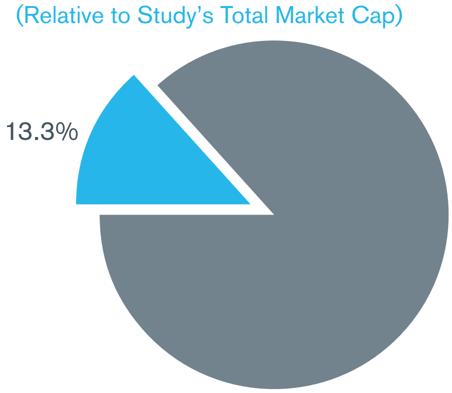
0.3%
Percent of Goodwill Impaired (GWI/GW ratio)

37.4%
Companies with Goodwill

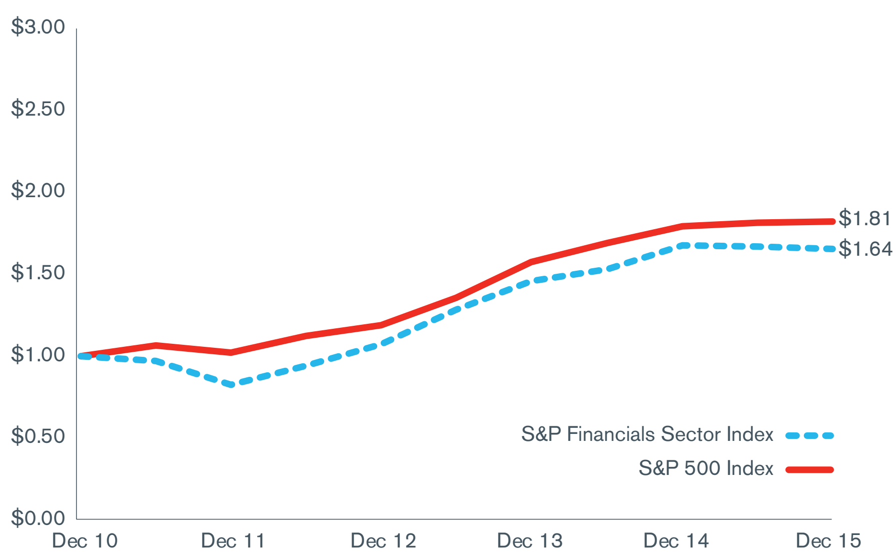
4.4%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

1.1
Market-to-Book Ratio (median)

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



Index (Year End 2010 = $1)



Top 3 Industry Goodwill Impairments

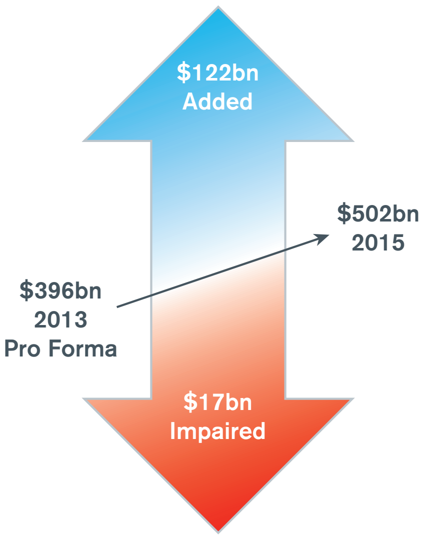
Ambac Financial Group, Inc.	$515 million
American Express Company	$219 million
Walter Investment Mgmt. Corp.	$208 million

2015 Industry Spotlight

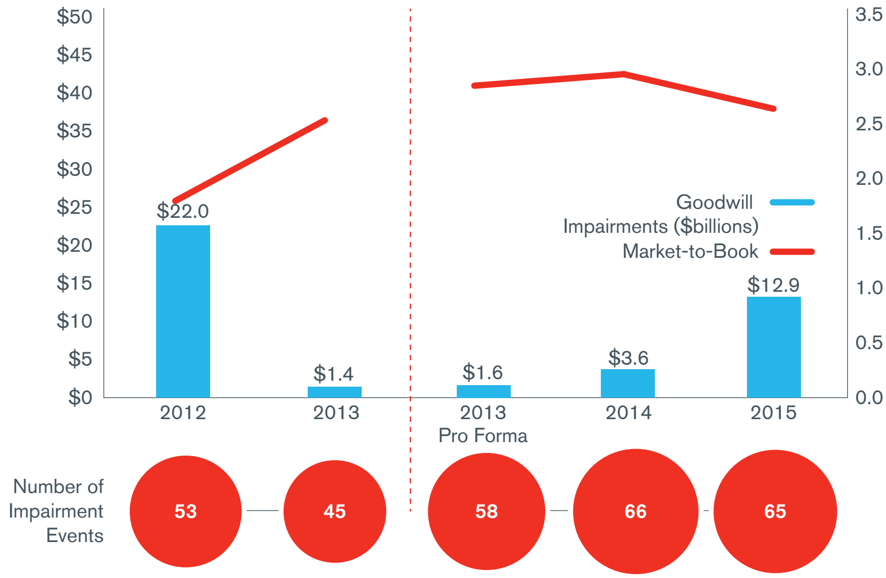
Information Technology

GICS Code 45

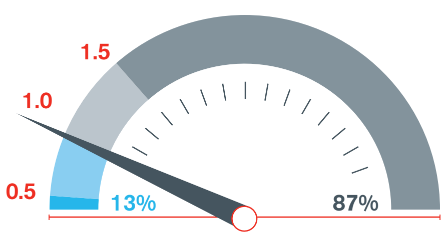
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

1,487
Companies

19.9%
Goodwill to Total Assets (GW/TA)

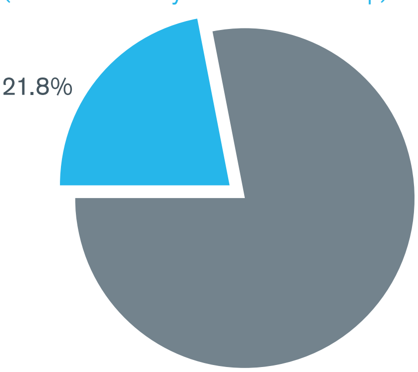
2.7%
Percent of Goodwill Impaired (GWI/GW ratio)

37.1%
Companies with Goodwill

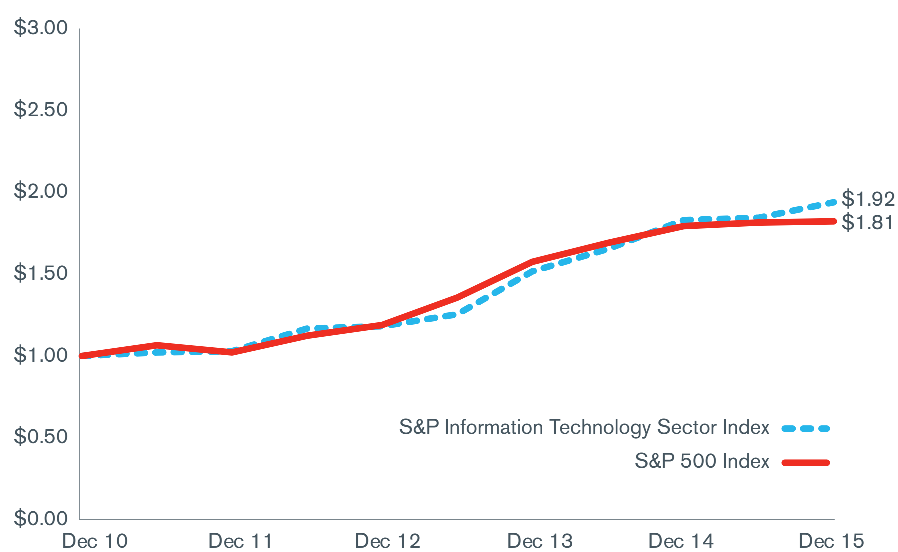
11.8%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

2.6
Market-to-Book Ratio (median)

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



Index (Year End 2010 = $1)



Top 3 Industry Goodwill Impairments

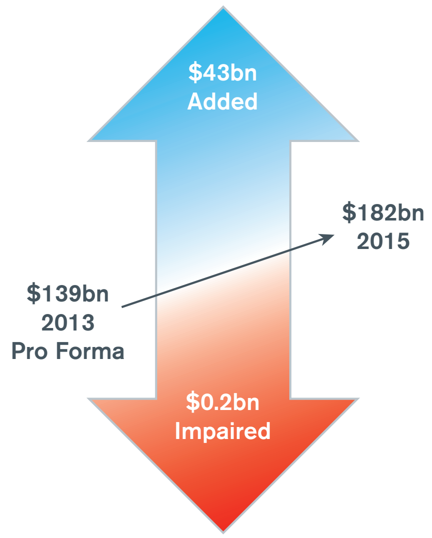
Microsoft Corporation	$5,100 million
Yahoo! Inc.	$4,461 million
eBay, Inc.	$786 million

2015 Industry Spotlight

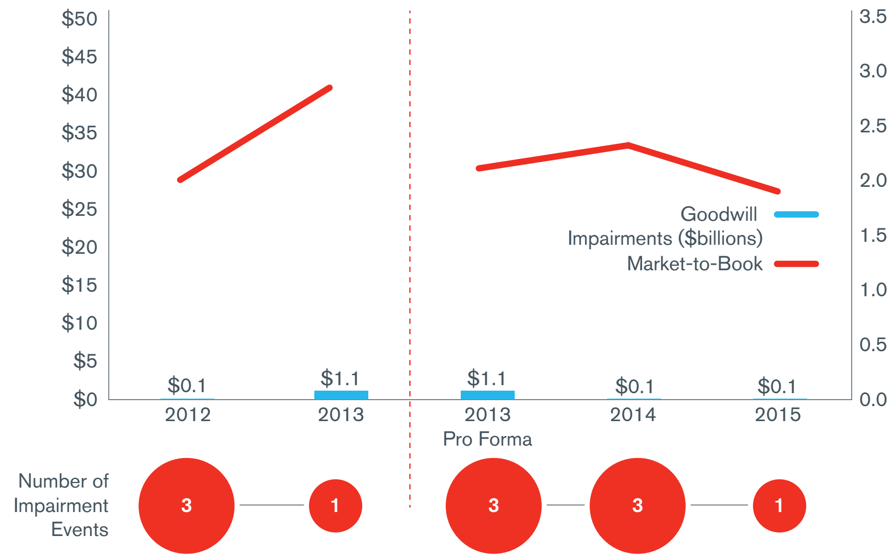
Telecommunication Services

GICS Code 50

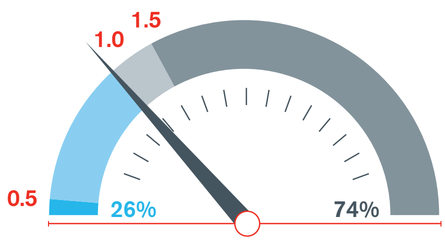
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

103
Companies

19.2%
Goodwill to Total Assets (GW/TA)

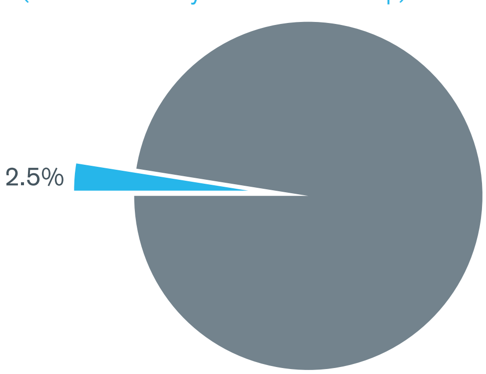
0.1%
Percent of Goodwill Impaired (GWI/GW ratio)

31.1%
Companies with Goodwill

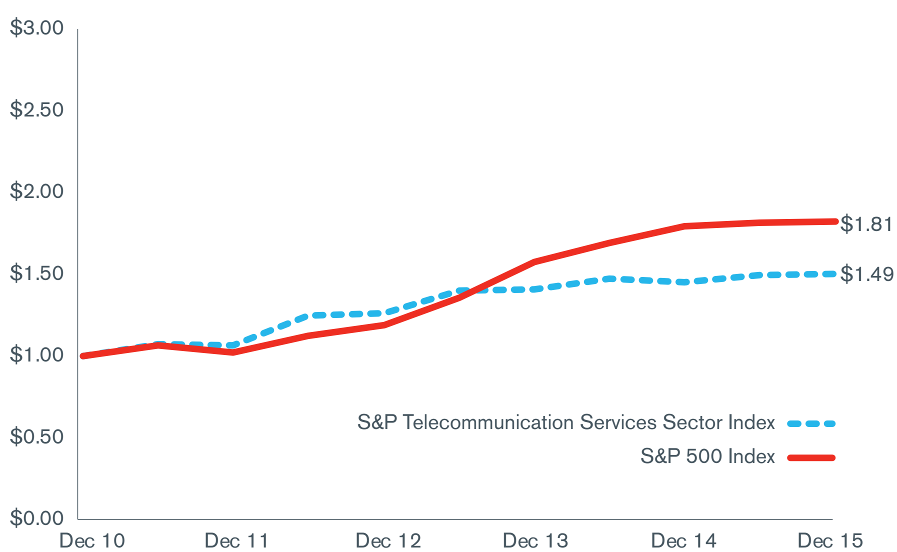
3.1%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

1.9
Market-to-Book Ratio (median)

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



Index (Year End 2010 = $1)



Top Industry Goodwill Impairments

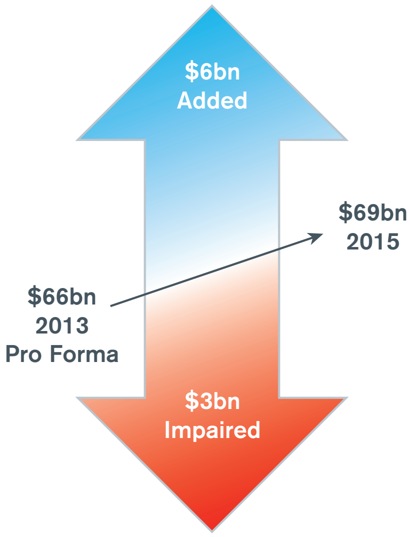
Iridium Communications, Inc.	$87 million

2015 Industry Spotlight

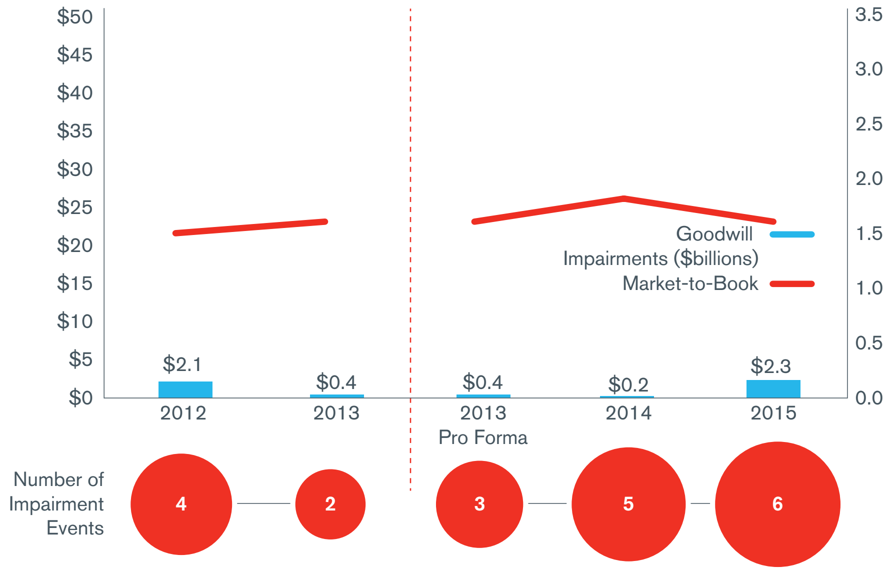
Utilities

GICS Code 55

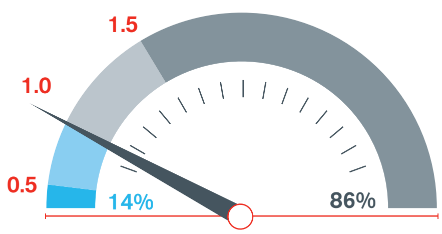
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

151
Companies

4.5%
Goodwill to Total Assets (GW/TA)

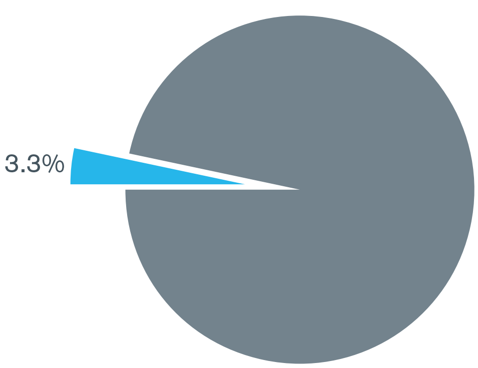
3.5%
Percent of Goodwill Impaired (GWI/GW ratio)

43.0%
Companies with Goodwill

9.2%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

1.6
Market-to-Book Ratio (median)

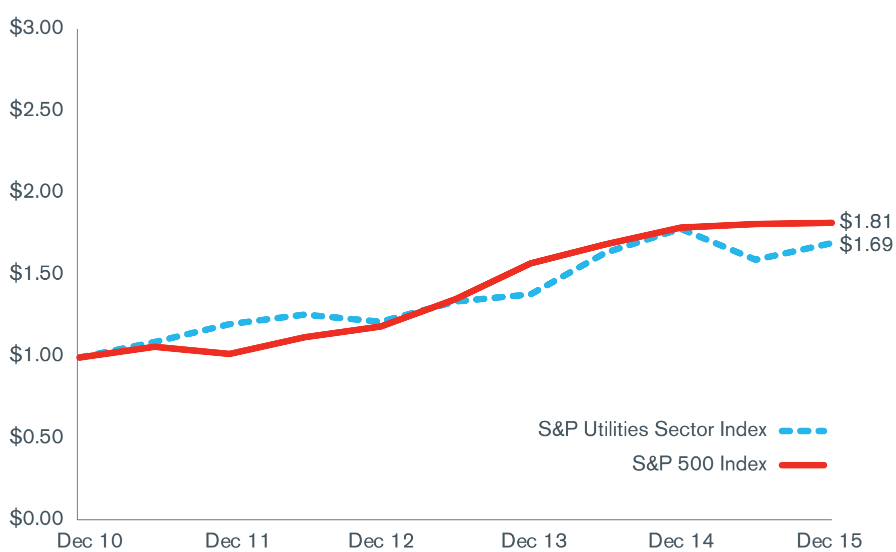
Size of Industry
(Relative to Study's Total Market Cap)



Top 3 Industry Goodwill Impairments

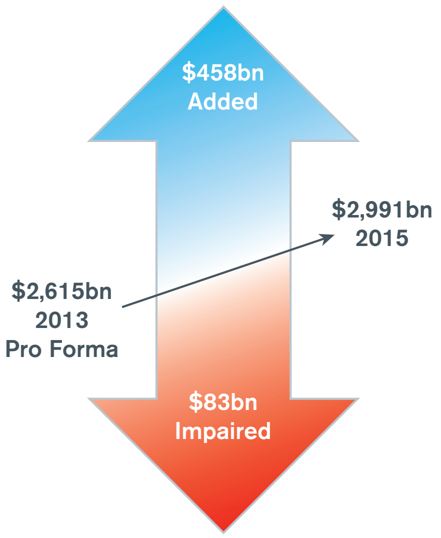
NRG Energy, Inc.	$1,500 million
Talen Energy Corporation	$465 million
The AES Corporation	$317 million

Index (Year End 2010 = $1)

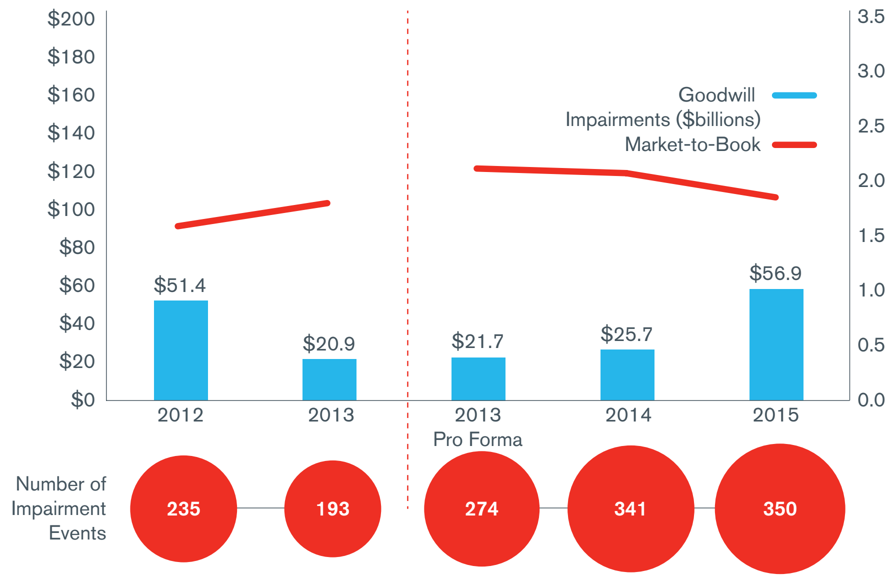


2015 Composite Industry Spotlight

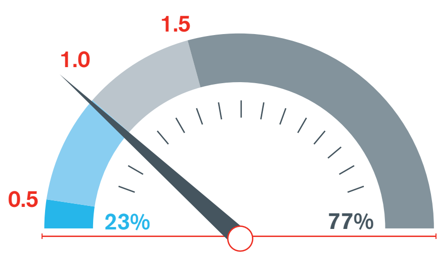
Goodwill Trends 2013 Pro Forma – 2015



Impairment History



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



(Percentages of Companies Below / Above 1.0)

8,508
Companies

7.0%
Goodwill to Total Assets (GW/TA)

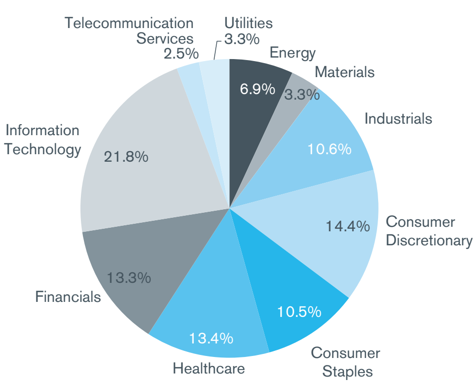
2.1%
Percent of Goodwill Impaired (GWI/GW ratio)

32.5%
Companies with Goodwill

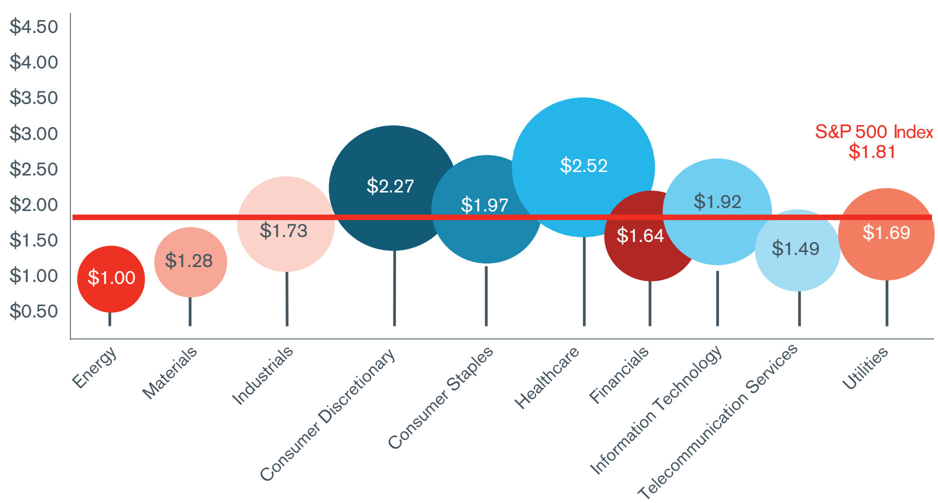
12.7%
Percent of Companies with Goodwill that Recorded a Goodwill Impairment in 2015

1.9
Market-to-Book Ratio (median)

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



Cumulative 5-year Total Return by Industry from 2011 to 2015 Index (Year End 2010 = $1)



Top 3 Industry Goodwill Impairments

Microsoft Corporation	$5,100 million
Yahoo! Inc.	$4,461 million
ConAgra Foods, Inc.	$1,999 million

Goodwill Impairments by Sub-Industry

Calendar Year 2015

Goodwill Intensity:

- Goodwill to Total Assets (GW/TA)

Loss Intensity:

- Goodwill Impairment to Goodwill (GWI/GW)

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

GICS Code	GICS Sub-Industry Name	Number Co.'s	% of Co.'s with GW	GW/TA	GWI/GW	% of Co's with GW that Recorded GWI	Goodwill Impairment (in $millions)	Market-to-Book Ratio
	Energy						**$18,182 (industry total)**	
10101010	Oil and Gas Drilling	11	27%	0.6%	45.5%	33.3%	$125	0.4
10101020	Oil and Gas Equipment and Services	96	31%	11.0%	19.4%	83.3%	$4,607	0.9
10102010	Integrated Oil and Gas	6	33%	0.7%	2.5%	50.0%	$119	1.5
10102020	Oil and Gas Exploration and Production	384	4%	1.6%	34.6%	100.0%	$6,623	1.4
10102030	Oil and Gas Refining and Marketing	68	26%	6.7%	2.4%	33.3%	$261	1.4
10102040	Oil and Gas Storage and Transportation	74	61%	12.0%	10.1%	33.3%	$6,410	1.5
10102050	Coal and Consumable Fuels	40	10%	0.6%	16.9%	50.0%	$39	1.1
	Materials						**$2,821 (industry total)**	
15101010	Commodity Chemicals	61	23%	14.7%	37.3%	28.6%	$1,328	1.9
15101020	Diversified Chemicals	9	56%	13.9%	0.1%	40.0%	$28	2.4
15101030	Fertilizers and Agricultural Chemicals	28	25%	14.7%	–	–	–	1.5
15101040	Industrial Gases	5	60%	12.6%	–	–	–	5.1
15101050	Specialty Chemicals	80	43%	25.0%	–	–	–	2.5
15102010	Construction Materials	22	27%	29.6%	–	–	–	2.2
15103010	Metal and Glass Containers	13	62%	29.6%	–	–	–	4.9
15103020	Paper Packaging	19	53%	22.8%	4.6%	20.0%	$615	3.7
15104010	Aluminum	11	27%	13.0%	3.0%	66.7%	$163	1.2
15104020	Diversified Metals and Mining	133	3%	2.6%	5.3%	25.0%	$16	2.3
15104030	Gold	105	2%	0.2%	–	–	–	2.3
15104040	Precious Metals and Minerals	46	–	–	–	–	–	1.7
15104045	Silver	9	–	–	–	–	–	0.9
15104050	Steel	42	38%	7.2%	10.3%	43.8%	$671	0.8
15105010	Forest Products	14	21%	1.4%	–	–	–	2.7
15105020	Paper Products	15	47%	8.9%	–	–	–	1.5
	Industrials						**$7,693 (industry total)**	
20101010	Aerospace and Defense	100	48%	27.0%	1.3%	20.8%	$1,477	1.9
20102010	Building Products	41	63%	17.9%	0.1%	3.8%	$6	3.2
20103010	Construction and Engineering	56	48%	22.7%	5.3%	29.6%	$799	1.3
20104010	Electrical Components and Equipment	112	26%	23.9%	0.7%	17.2%	$106	2.0
20104020	Heavy Electrical Equipment	41	17%	15.2%	0.1%	14.3%	$0	1.8
20105010	Industrial Conglomerates	12	58%	12.5%	0.7%	28.6%	$578	2.7
20106010	Construction Machinery and Heavy Trucks	40	65%	9.0%	7.1%	15.4%	$1,230	1.6
20106015	Agricultural and Farm Machinery	13	46%	3.1%	–	–	–	3.3
20106020	Industrial Machinery	159	45%	26.9%	2.3%	21.1%	$1,027	2.1
20107010	Trading Companies and Distributors	69	42%	16.3%	5.2%	20.7%	$757	1.5

Goodwill Impairments by Sub-Industry

Calendar Year 2015

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

GICS Code	GICS Sub-Industry Name	Number Co.'s	% of Co.'s with GW	GW/TA	GWI/GW	% of Co's with GW that Recorded GWI	Goodwill Impairment (in $millions)	Market-to-Book Ratio
	Industrials (continued)							
20201010	Commercial Printing	14	57%	22.6%	18.9%	50.0%	$887	1.9
20201050	Environmental and Facilities Services	130	23%	38.1%	2.1%	23.3%	$513	2.1
20201060	Office Services and Supplies	35	40%	25.3%	2.0%	14.3%	$120	2.6
20201070	Diversified Support Services	43	40%	27.9%	0.2%	5.9%	$10	1.7
20201080	Security and Alarm Services	11	27%	29.8%	–	–	–	3.1
20202010	Human Resource and Employment Services	42	52%	19.8%	0.7%	9.1%	$22	2.3
20202020	Research and Consulting Services	64	41%	53.9%	1.1%	19.2%	$157	2.0
20301010	Air Freight and Logistics	22	55%	16.2%	–	–	–	1.8
20302010	Airlines	17	29%	10.6%	–	–	–	3.0
20303010	Marine	7	43%	13.0%	0.4%	33.3%	$3	0.9
20304010	Railroads	10	30%	0.7%	–	–	–	2.0
20304020	Trucking	29	45%	5.1%	–	–	–	1.9
20305010	Airport Services	4	50%	30.4%	–	–	–	1.1
20305020	Highways and Railtracks	1	–	–	–	–	–	–
20305030	Marine Ports and Services	4	–	–	–	–	–	0.7
	Consumer Discretionary						**$7,638 (industry total)**	
25101010	Auto Parts and Equipment	85	31%	14.1%	0.1%	7.7%	$15	2.8
25101020	Tires and Rubber	3	67%	2.8%	–	–	–	2.1
25102010	Automobile Manufacturers	18	11%	0.1%	3.4%	50.0%	$9	2.2
25102020	Motorcycle Manufacturers	7	14%	0.6%	–	–	–	4.7
25201010	Consumer Electronics	33	15%	23.6%	7.4%	20.0%	$50	2.5
25201020	Home Furnishings	18	44%	23.2%	0.2%	25.0%	$5	1.7
25201030	Homebuilding	36	42%	3.5%	0.6%	6.7%	$10	1.2
25201040	Household Appliances	20	20%	14.4%	–	–	–	2.0
25201050	Housewares and Specialties	13	62%	35.4%	2.1%	12.5%	$119	2.9
25202010	Leisure Products	49	33%	16.5%	0.8%	6.3%	$30	2.6
25203010	Apparel, Accessories and Luxury Goods	65	34%	16.8%	0.5%	9.1%	$41	2.1
25203020	Footwear	12	42%	3.1%	–	–	–	1.8
25203030	Textiles	6	67%	1.6%	–	–	–	2.3
25301010	Casinos and Gaming	53	38%	8.9%	20.0%	15.0%	$2,475	1.5
25301020	Hotels, Resorts and Cruise Lines	37	43%	14.2%	–	–	–	2.2
25301030	Leisure Facilities	32	38%	13.9%	1.4%	16.7%	$34	2.5
25301040	Restaurants	98	53%	14.3%	0.5%	5.8%	$83	3.7
25302010	Education Services	49	35%	22.3%	5.9%	29.4%	$343	1.2
25302020	Specialized Consumer Services	36	39%	18.4%	0.0%	7.1%	$0	4.3
25401010	Advertising	68	15%	34.3%	2.0%	30.0%	$262	1.4
25401020	Broadcasting	36	64%	32.4%	3.1%	34.8%	$1,094	2.4
25401025	Cable and Satellite	18	61%	17.4%	0.0%	9.1%	$21	5.8
25401030	Movies and Entertainment	110	15%	36.3%	0.1%	11.8%	$54	2.2
25401040	Publishing	33	42%	23.8%	16.4%	14.3%	$1,243	1.6
25501010	Distributors	46	17%	21.0%	0.0%	12.5%	$0	4.0
25502010	Catalog Retail	–	–	–	–	–	–	–
25502020	Internet Retail	71	27%	19.1%	0.5%	5.3%	$85	3.3
25503010	Department Stores	7	43%	6.2%	–	–	–	1.6

Goodwill Impairments by Sub-Industry
Calendar Year 2015

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

GICS Code	GICS Sub-Industry Name	Number Co.'s	% of Co.'s with GW	GW/TA	GWI/GW	% of Co's with GW that Recorded GWI	Goodwill Impairment (in $millions)	Market-to-Book Ratio
	Consumer Discretionary (continued)							
25503020	General Merchandise Stores	10	50%	16.6%	–	–	–	2.2
25504010	Apparel Retail	49	37%	6.1%	7.1%	11.1%	$288	1.9
25504020	Computer and Electronics Retail	8	38%	8.4%	36.7%	33.3%	$1,170	1.4
25504030	Home Improvement Retail	6	33%	2.9%	–	–	–	7.3
25504040	Specialty Stores	40	53%	12.6%	1.9%	14.3%	$149	1.8
25504050	Automotive Retail	30	53%	10.4%	0.9%	12.5%	$60	2.8
25504060	Home Furnishing Retail	11	55%	11.9%	–	–	–	3.1
	Consumer Staples						**$2,479 (industry total)**	
30101010	Drug Retail	11	27%	42.9%	–	–	–	2.9
30101020	Food Distributors	20	40%	13.7%	2.1%	25.0%	$58	2.3
30101030	Food Retail	20	50%	10.7%	–	–	–	3.0
30101040	Hypermarkets and Super Centers	3	67%	7.0%	–	–	–	4.3
30201010	Brewers	5	60%	13.5%	–	–	–	2.5
30201020	Distillers and Vintners	19	21%	35.5%	0.0%	25.0%	$0	3.7
30201030	Soft Drinks	49	20%	17.1%	–	–	–	8.1
30202010	Agricultural Products	36	19%	6.9%	0.3%	14.3%	$13	1.2
30202030	Packaged Foods and Meats	121	31%	41.6%	2.7%	18.4%	$2,372	2.7
30203010	Tobacco	26	27%	31.7%	0.1%	42.9%	$17	8.4
30301010	Household Products	25	52%	25.4%	–	–	–	2.4
30302010	Personal Products	132	11%	14.3%	0.4%	26.7%	$19	2.6
	Healthcare						**$1,337 (industry total)**	
35101010	Healthcare Equipment	223	31%	36.9%	0.3%	5.7%	$182	3.3
35101020	Healthcare Supplies	58	48%	33.2%	5.7%	14.3%	$559	3.1
35102010	Healthcare Distributors	26	35%	21.6%	–	–	–	3.5
35102015	Healthcare Services	104	40%	56.7%	0.8%	14.3%	$466	3.8
35102020	Healthcare Facilities	49	45%	33.8%	0.1%	13.6%	$31	1.6
35102030	Managed Healthcare	21	57%	27.9%	0.0%	8.3%	$18	2.2
35103010	Health Care Technology	78	28%	37.9%	0.5%	13.6%	$33	3.4
35201010	Biotechnology	432	18%	20.1%	0.2%	5.1%	$43	3.8
35202010	Pharmaceuticals	206	18%	22.2%	0.0%	5.3%	$2	4.0
35203010	Life Sciences Tools and Services	55	51%	35.8%	0.0%	3.6%	$3	3.9
	Financials						**$1,396 (industry total)**	
40101010	Diversified Banks	10	80%	2.0%	0.0%	12.5%	$31	0.8
40101015	Regional Banks	717	45%	2.6%	0.0%	0.3%	$1	1.1
40102010	Thrifts and Mortgage Finance	201	34%	0.1%	4.1%	1.5%	$208	1.0
40201020	Other Diversified Financial Services	7	14%	0.0%	–	–	–	0.6
40201030	Multi-Sector Holdings	14	21%	3.4%	1.1%	33.3%	$20	0.6
40201040	Specialized Finance	25	16%	0.4%	–	–	–	2.4
40202010	Consumer Finance	41	51%	2.3%	1.7%	23.8%	$363	1.1
40203010	Asset Management and Custody Banks	99	7%	2.6%	0.0%	14.3%	$3	3.9
40203020	Investment Banking and Brokerage	53	47%	1.1%	0.2%	12.0%	$39	1.5
40203030	Diversified Capital Markets	1	–	–	–	–	–	0.8
40301010	Insurance Brokers	12	67%	42.4%	0.4%	12.5%	$49	2.2

Goodwill Impairments by Sub-Industry
Calendar Year 2015

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

GICS Code	GICS Sub-Industry Name	Number Co.'s	% of Co.'s with GW	GW/TA	GWI/GW	% of Co's with GW that Recorded GWI	Goodwill Impairment (in $millions)	Market-to-Book Ratio
	Financials (continued)							
40301020	Life and Health Insurance	26	46%	0.6%	–	–	–	0.9
40301030	Multi-line Insurance	12	58%	0.2%	1.6%	28.6%	$37	1.0
40301040	Property and Casualty Insurance	50	50%	2.8%	4.6%	20.0%	$621	1.4
40301050	Reinsurance	4	50%	0.2%	–	–	–	0.9
40402010	Diversified REITs	1	–	–	–	–	–	–
40402020	Industrial REITs	–	–	–	–	–	–	–
40402030	Mortgage REITs	46	9%	0.0%	8.7%	25.0%	$23	0.7
40402035	Hotel and Resort REITs	1	100%	1.4%	–	–	–	1.0
40402040	Office REITs	1	100%	22.2%	–	100.0%	$2	0.9
40402045	Healthcare REITs	–	–	–	–	–	–	–
40402050	Residential REITs	3	–	–	–	–	–	1.5
40402060	Retail REITs	–	–	–	–	–	–	–
40402070	Specialized REITs	6	50%	39.0%	–	–	–	2.5
40403010	Diversified Real Estate Activities	16	6%	2.2%	–	–	–	1.4
40403020	Real Estate Operating Companies	53	6%	0.3%	0.1%	33.3%	$0	1.6
40403030	Real Estate Development	32	6%	1.0%	–	–	–	0.9
40403040	Real Estate Services	14	36%	36.8%	–	–	–	4.1
	Information Technology						**$12,935 (industry total)**	
45101010	Internet Software and Services	403	29%	17.9%	8.9%	22.9%	$5,704	3.2
45102010	IT Consulting and Other Services	87	41%	29.2%	1.1%	8.3%	$450	2.5
45102020	Data Processing and Outsourced Services	80	63%	31.5%	0.1%	8.0%	$88	3.3
45103010	Application Software	230	33%	39.2%	0.8%	6.5%	$259	4.7
45103020	Systems Software	73	37%	21.0%	7.1%	11.1%	$5,296	4.1
45103030	Home Entertainment Software	26	19%	37.7%	0.1%	40.0%	$8	5.6
45201020	Communications Equipment	127	36%	25.7%	0.6%	6.5%	$232	1.7
45202030	Technology Hardware, Storage and Peripherals	74	34%	13.9%	0.8%	16.0%	$504	2.5
45203010	Electronic Equipment and Instruments	134	31%	24.6%	0.6%	12.2%	$40	2.1
45203015	Electronic Components	35	43%	14.4%	0.1%	6.7%	$5	1.8
45203020	Electronic Manufacturing Services	35	49%	12.6%	0.6%	11.8%	$17	1.4
45203030	Technology Distributors	51	39%	13.4%	0.7%	5.0%	$53	1.2
45301010	Semiconductor Equipment	48	52%	12.3%	1.2%	8.0%	$80	1.6
45301020	Semiconductors	84	60%	14.0%	0.7%	6.0%	$199	2.5
	Telecommunications Services						**$87 (industry total)**	
50101010	Alternative Carriers	45	20%	28.2%	1.0%	11.1%	$87	3.2
50101020	Integrated Telecommunication Services	37	46%	26.1%	–	–	–	1.7
50102010	Wireless Telecommunication Services	21	29%	5.9%	–	–	–	1.2
	Utilities						**$2,338 (industry total)**	
55101010	Electric Utilities	36	53%	4.4%	–	–	–	1.6
55102010	Gas Utilities	24	67%	11.5%	0.4%	12.5%	$43	1.9
55103010	Multi-Utilities	18	89%	4.1%	–	–	–	1.6
55104010	Water Utilities	23	30%	4.8%	–	–	–	1.9
55105010	Independent Power Producers and Energy Traders	14	29%	2.3%	42.6%	75.0%	$2,282	1.0
55105020	Renewable Electricity	36	8%	6.7%	22.2%	33.3%	$13	0.9

Appendix

Company Base Set Selection and Methodology

The 2016 Study focused on financial data for U.S.-based publicly-traded companies filing under U.S. GAAP. The primary sources of data for the 2015 Study were the S&P Global's Capital IQ database and individual company annual and interim financial reports.*

The following procedures were used to arrive at the 2016 Study dataset, which was used to calculate all ratios and summary statistics throughout the 2016 Study:

- American Depositary Receipts (ADRs), exchange traded funds (ETFs), and Closed End Funds were excluded from S&P Global's Capital IQ database leaving 8,570 U.S.-based, U.S.-traded companies as of April 6, 2016.
- From this set, further excluded were companies that were either identified as consolidated subsidiaries of other companies also within the dataset, or which were not deemed to be publicly traded U.S. firms in 2015, resulting in a base set of 8,508 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 2016 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.

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† 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 of bankruptcy, as stated in the company's 2010 10-K filing. Further, 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.

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