

Is Goodwill Really an Asset?

Abstract: Is goodwill a plug figure or does it represent unrecorded value? Research has focused on whether the value of goodwill is reflected in market capitalization. However, from an economic perspective goodwill is only an asset only if it generates rent.

To test whether goodwill is an asset, return on assets is analyzed by industry for companies with and without goodwill over a ten year period. In most industries, companies with goodwill performed as well as those without it.

The contribution of this study is to test the empirical foundation for the treatment of goodwill under SFAS 141 on an industry by industry basis.

Data Availability: Data for this paper comes from Compustat.

Key Words: Goodwill, rent, intangible, asset

I. INTRODUCTION

Goodwill is the difference between the purchase price of a company and the fair value of its assets. This difference is booked as an asset under authority of Financial Accounting Standards Board (FASB) Statement of Accounting Standard (SFAS) No. 141 *Business Combinations* (2001). Prior authority for booking goodwill as an asset can be found in Accounting Principals Board (APB) Opinion 16, *Business Combinations* (1970).

Goodwill has historically been a significant asset on the books of US corporations and with the implementation of SFAS 141, which requires all business combinations to be treated as purchases, it will become more significant. In 2004, the 4,985 largest companies listed on Compustat had assets of \$46.1 trillion and goodwill of \$1.8 trillion or about 3.86%. Some 212 of those companies or 4.25% of the total would have zero or negative equity if goodwill were found worthless and written off.

The argument for goodwill is that acquirers pay the fair market value of firms and the difference between the purchase price and the fair market value of acquired assets represents a premium for intangible assets such as brand name, customer base, intellectual property, the skills of management and other value not captured by Generally Accepted Accounting Practices (GAAP). The issue is whether goodwill represents a rent generating asset, as claimed, or an overpayment papered over by bookkeeping. A further question arises as to whether goodwill generates rents in all industries or only in industries that rely upon brand name, intellectual property, and specialized management expertise.

The contributions of this study are to empirically test the assumption implicit in SFAS 141 (2001) that goodwill is an asset; to test whether goodwill is an asset in some industries and not in others; compare rent generated by goodwill as measured by return on assets for companies

with and without goodwill; and to determine whether goodwill only generates rent on the margin or whether it continues to generate rent when it reaches a high percentage of assets.

Section II of this study is a literature review. Section III presents the research questions. Section IV describes the methodology used. Section V presents the empirical analysis of whether and where goodwill generates rents and Section VI presents the conclusions and suggestions for future research.

II. LITERATURE REVIEW

SFAS 141 (2001) and APB 16 (1970) before it, provide authoritative guidance for booking goodwill as an asset. The issue of what constitutes an asset is central to the framework of accounting. Some question whether goodwill is a rent generating asset or whether it is simply a plug entry (Lander and Reinstein 2003). In other words, is goodwill an asset simply because the FASB says it is?

The rationale for goodwill can be traced back to 1888 and the Liverpool Chartered Accountants Students' Association which stated that goodwill reflected a benefit from the regard that customers entertain toward a business (Massoud & Raiborn 2003; Bourne 1888). More recently, the concept of goodwill as an asset was recognized in Accounting Research Bulletin (ARB) No. 24 (1944). Goodwill is defined in California as benefits that accrue to a business as the result of its location, reputation for dependability, skill or quality and any other circumstances resulting in probable retention of old, or acquisition of new patronage (California Code of Civil Procedure §1263.510(b)). The residual nature of the goodwill calculation complicates the interpretation of its meaning. Errors in fair value estimates, as well as acquisition over and under payments affect its value. Another factor that complicates the interpretation of

goodwill is that internally generated goodwill of the acquiring company is unrecognized whereas the goodwill of an acquired company is recognized at the purchase date (Nearon 2004; Lev 2001; Blair and Wallman 2001; Lander and Reinstein 2003).

Some argue financial statements have lost relevance because they do not capture intangibles such as business models and management talent that give one company superior performance over another. Business success depends more on people than assets and conventional accounting methods do not measure this value (Barber and Strack 2005). APB Opinion No.17 “Intangible Assets” (1970) has long recognized that the value of most companies lies not in their “bricks and mortar” but in its human and intellectual capital, which is value not represented on the balance sheet.

On the other hand, goodwill has not been universally recognized as an asset. Accounting Research Study No. 10, “Accounting for Goodwill” (1968) suggests that goodwill should be immediately written off. The argument is that goodwill is simply the result of the subjective evaluation of purchasers, and such subjective evaluations can vary widely. For example, the offer price of a firm can rise dramatically when there are two or three bidders (Johnson and Petrone 1998).

Some argue that assets should be limited to the definition of property (Fisher 1906; Samuelson 1996). From a legal prospective, property is a bundle of rights. A right of ownership includes the right to use an article, to change its character, transfer some or all of the property rights to others through sale or rental and to share in profits or losses from its use (Furuboton and Pejovich 1972). Goodwill cannot be sold independently or rented, its character cannot be changed, and it cannot independently generate rent.

There are several benefits to using property as a test of whether something is an asset. For one thing, it is a clear, easy test to apply. For another, it is a concept that most users of financial statements can understand. By this definition, goodwill would not qualify as an asset. One has to look no further than banks to see this definition put into action. Most banks require that a borrower provide a statement of its tangible net worth each month and goodwill is explicitly excluded as an asset in such calculations (Vance 2005).

Statement of Financial Accounting Concepts (SFAC) No. 6 (1985 §175) cautioned that not all expenditures for goodwill qualify as an asset because they lack the capacity to generate future benefits. This caution seems to have been ignored. Walter P. Schuetz, former Chief Accountant for the SEC criticized the FASB treatment of goodwill as a asset as an example of the cost-per-se-is-the-asset syndrome so long as some future benefit can be imagined (Schuetze 1993). The problem with arguments on both sides of the goodwill issue is just that, they are arguments. A more reasoned approach might be to empirically test whether goodwill actually generates rent at a rate comparable to other assets.

Five studies have analyzed the market's perception of whether goodwill generates rent by using market capitalization as the dependent variable and goodwill and a variety of other variables as independent variables. McCarthy and Schneider (1995) and Wang (1995, 1993) regressed goodwill, other assets, liabilities and net assets less goodwill against market capitalization. Jennings, et. al. (1996) performed a similar study analyzing plant, property and equipment as separate terms in their regression analysis. These studies found the goodwill coefficient was significant, had the expected sign and was greater than the coefficient for both non-goodwill assets and non-goodwill assets net of liabilities. The greater coefficient for goodwill implies the value of goodwill is under recorded in accounting records as it may well be

for internally generated goodwill. Chauvin and Hirschey (1994) expanded their analysis to include variables such as net income, advertising, research and development expenditures, market share, other intangible assets, leverage, sales growth and Beta. They found that goodwill was valued by the market for non-manufacturing companies, but was not valued by the market for manufacturing companies. Each of these studies was limited to companies with goodwill.

Begley, et. al. (2006) analyzed banks and used goodwill, which they defined as the difference between market value and equity, as their dependent variable. Independent variables included loans, deposits, new loans, new deposits, non-performing loans and fee income as additional independent variables. They found that even considering all those factors, the market still imputes additional rent generating power to goodwill. Samples sizes and the results of these six studies are summarized in Table 1 Prior empirical findings.

INSERT TABLE 1 SUMMARY OF PRIOR EMPIRICAL RESEARCH

III. RESEARCH QUESTIONS

These studies raise some interesting questions. For example, does the rent generating power of goodwill vary from industry to industry? When a broad cross section of companies is studied, goodwill produces rent (McCarthy and Schneider 1995; Wang 1995; Jennings, et. al. 1996). Wang's (1993) study shows goodwill generates rent in service companies. Begley, et. al. (2006) found that goodwill generates rents for the banking sector. However, Chauvin and Hirschey (1994) found the market sees the rent generating power of goodwill in non-manufacturing companies, but not in manufacturing companies.

Another question unaddressed by these studies is whether there is an unrecorded “rent generating variable” present in companies with no goodwill on their books? Arguably, good companies generate goodwill internally all the time. Do companies with unbooked, internally generated goodwill produce as much or more than companies that explicitly book goodwill? We cannot know because five of these six aforementioned studies systematically excluded companies without goodwill.

Another problem is that the dependent variable in each of these studies is or includes market capitalization. The stock market, and stock prices are continually buffeted by external factors such as interest rates, war, recession and even irrational exuberance. This raises the possibility that external factors are swamping the effects of goodwill and the other independent variables in these studies and suggests the need for a measure that is independent of the vagaries of the market.

Another question is whether companies that explicitly book goodwill differ from those that do not. If goodwill is a rent generating asset and not just a plug figure then companies with goodwill among their assets should produce operating income at rates comparable to companies without goodwill. Return on assets (ROA) defined in this study as operating income before depreciation and amortization scaled by average assets is selected as the measure of whether goodwill generates rent. One benefit of this measure is that it is independent of market fluctuations.

In theory, goodwill is more like intellectual capital than it is like physical assets. Since some industries, like coal mining, rely more on physical assets than other industries, such as business services, it is possible that goodwill generates rent some industries and not in others. This leads to research question one which is whether there a statistically significant difference in

the ROA of companies with goodwill and those without goodwill on an industry by industry.

Hypothesis H₀ is:

$$ROA_{GW_i} = ROA_{NGW_i}$$

Where ROA_{GW_i} is the return on assets of companies with goodwill in industry i and ROA_{NGW_i} is the return on assets of companies with no goodwill in industry i.

In this study, a company is considered to have goodwill if goodwill comprises one percent or more of its assets. Companies for which goodwill represents less than one percent of assets are considered not to have goodwill. This raises the possibility that companies with no goodwill are being compared to companies with slightly more than one percent goodwill. To place the issue of whether goodwill generates rent in bold relief, the ROA of companies without goodwill are compared to companies in which goodwill represents at least twenty percent of assets. These are called high goodwill companies. This leads to the second research question. Is there a statistically significant difference between the ROA of companies with no goodwill and those with high goodwill on an industry by industry basis? Hypothesis H₁ is:

$$ROA_{HGW_i} = ROA_{NGW_i}$$

Where ROA_{HGW_i} is the return on assets of companies with high goodwill in industry i and ROA_{NGW_i} is the return on assets of companies with no goodwill in industry i.

IV. METHODOLOGY

Data Source

To explore the questions raised by the literature and this paper, return on assets was analyzed for the ten year period 1995 to 2004. Firms which began each year with at least \$20

million of assets, stock price of at least \$1, and prior year's sales of at least \$5 million were selected from the Compustat North American database. Firms with less than \$20 million in assets were eliminated so that numerous small firms without goodwill would not distort statistical analyses through dint of numbers. Sales of \$5 million was selected as a minimum threshold for an active company. Firms with a stock price of less than \$1 were eliminated to remove more speculative companies. Companies that had sufficient assets, sales and stock price to be selected one year did not necessarily qualify for selection in all ten years of this study. Some companies merged, went out of business or fell below the selection threshold. For example, a company could be unselected in one year because it did not meet minimum criteria, classified as a company without goodwill for five years and a company with goodwill for four years. To maximize the data available for this study, companies were selected and their performance in terms of ROA was evaluated on a year by year basis, with each year being a data point. These data points were aggregated by industry and then classified by the percentage of goodwill on their balance sheet in a particular year.

Firms with incomplete information were also eliminated from the sample. There were 2,652 firms that met the foregoing criteria in 1995 and 4,985 firms which met these criteria in 2004. See Table 2 Overview of study population. In total, this study analyzes some 38,519 years of company operating experience.

INSERT TABLE 2 OVERVIEW OF STUDY POPULATION

Variables

The dependent variable in this study is return on assets (ROA) defined as operating income before depreciation and amortization scaled by average assets. The independent variables

in this study include: industry, whether or not a company has goodwill, and whether a company is a high goodwill company. This study uses the Fama and French (1997) classification system which assigns four digit standard industrial codes (SIC) to forty eight industries. A SIC / industry cross reference table is provided as Appendix A.

V. EMPIRICAL ANALYSIS

The mean and standard deviation of ROA were computed by industry for companies with goodwill, without goodwill and with high goodwill.

The Coal, Gold, and Smoke industries were eliminated from the study because, over a ten year period, they had less than twenty years of operations with goodwill, the minimum number deemed necessary to draw statistically reliable conclusions. Of the remaining forty five industries, companies without goodwill outperformed companies with goodwill in six industries on a statistically significant basis. Such findings tend to support the notion that goodwill is simply a plug figure rather than an asset as claimed by the FASB. However, in twenty one industries, there was no statistically significant difference in the performance of companies with and without goodwill. This finding tends to support the assumption underlying SFAS 141 (2001) that goodwill represents intellectual capital not captured by traditional accounting means, but which is recognized in the price acquiring companies pay for a target firm. The more surprising finding is that companies with goodwill outperformed those without goodwill in eighteen of forty five industries. This indicates that goodwill provides a return superior return to that of traditional assets in many industries and is consistent with the argument of Barber and Strack (2005) that performance depends more on people than assets. The performance of companies with and without goodwill by industry is provided in Table 3 Performance analysis.

INSERT TABLE 3 PERFORMANCE ANALYSIS

The data answer research question one in the affirmative by demonstrating that the rent generating power of goodwill varies from industry to industry. Therefore we must reject H_0 for some industries, but not all. The data also provide the unexpected result that, in some industries, companies with goodwill outperform those without goodwill. See Table 4 Summary of industry results.

While companies with goodwill perform at least as well as companies without goodwill in thirty nine of forty five industries, it is reasonable to ask whether any firm conclusions can be drawn by comparing companies with less than one percent goodwill to companies with slightly more than one percent goodwill. Research question two seeks to address this by comparing the performance of high goodwill companies, that is those with twenty percent or more of their assets in goodwill, to companies without goodwill. Ten industries were eliminated from this analysis (Agric, Banks, Beer, Coal, Gold, Guns, Mines, Smoke, Soda and Txtls) because each had less than twenty years of operating history as high goodwill companies. Of the remaining thirty eight industries, the data show that in seven industries, high goodwill companies underperformed companies with no goodwill by statistically significant margins; in twenty industries there is no statistically significant difference between companies with high goodwill and those without goodwill and in twelve industries companies with high goodwill outperformed companies with no goodwill by a statistically significant margin. Table 3 provides the performance analysis and statistical details of each industry and Table 4 provides a summary of industry results.

The answer to research question two, which asks whether there is a difference in the rent generating power of high goodwill companies and companies without goodwill on an industry by industry basis, is that there is a statistically significant difference. We must therefore reject hypothesis H_1 for some industries, but not all. However, the fact that thirty two of the thirty eight industries with high goodwill performed as well as or better than companies without goodwill tends to refute the theory that goodwill is simply a plug number and not a rent generating asset.

VI. CONCLUSION

The results of this study broadly support the implicit assumption underlying FASB 141 (2001) that goodwill is a rent generating asset. While this assumption is not supported for every industry it is supported in thirty nine of the forty five industries in this study or about 87%. To determine whether this phenomenon was the result of comparing firms with no goodwill to those with slightly more than one percent goodwill, a second analysis was done to compare the performance of companies with no goodwill to those with high goodwill, that is 20% or more of their assets in goodwill. The data show that companies with high goodwill generate rent on total assets at least as great as that of no goodwill companies in thirty two of thirty eight industries or about 84%.

As robust as these findings seem, they raise several questions for further research. For example, is the guidance provided by FASB 141 (2001) is too broad? Perhaps it should be revised to include tests to determine whether goodwill is likely to generate promised benefits as suggested by SFAC 6 (1985). One such test might be whether goodwill has historically generated rents in a particular industry. Another question for future research is whether goodwill

impairment can be tested by objective means. SFAS 142 requires that goodwill be tested for impairment annually, but provides little guidance for doing so. One test of whether goodwill is impaired and should be written off is whether it fails to generate rent equal to the mean ROA of other companies in its industry.

One theory advanced for the value of goodwill is that the key value driver is the skill and learning of a company's management. If so, perhaps goodwill is simply a marker for some set of superior management behaviors. A future line of research might concentrate on identifying such behaviors.

Table 1
Summary of prior empirical research

The studies in this table only analyze firms reported on Compustat. The number of companies in each study varied from year to year. The common denominator is the total number of years of company operations.

<u>Study</u>	<u>Years of operations</u>	<u>Methodology</u>	<u>Finding</u>
Begley, Chamberlain and Li 2006	1,865	Regression of loan and deposit levels, new loans and new deposits, non-performing loans and fee income against goodwill defined as the difference between equity and market value. Limited to banks.	Banks are consistently valued higher than their underlying assets which suggest the difference is goodwill.
Jennings, Robinson, Thompson and Duvall 1996	259	Regression of plant, property and equipment, goodwill, other assets and liabilities against the market value. Limited to non-depository firms with goodwill.	Markets consistently value goodwill higher than either plant, property and equipment or other assets.
McCarthy and Schneider 1995	6,216	Regressions of goodwill, other assets, liabilities, other assets net of liabilities and income against market value. Limited to firms with goodwill.	Markets consistently value goodwill at least as much as other assets.
Wang 1995	3,728	Regressions of goodwill, other assets, liabilities and other assets net of liabilities against market value. Limited to firms with goodwill.	Markets consistently value goodwill more than other assets.
Chauvin and Hirschey 1994	2,693	Recursive regression of goodwill, net income, advertising, R&D expenditures, market share, intangible assets, tangible assets, leverage, sales growth and Beta against market value. Limited to firms with goodwill.	Goodwill was valued for non-manufacturing companies, but not for manufacturing companies.
Wang 1993	136	Regressions of goodwill, non-goodwill assets, liabilities, non-goodwill assets net of liabilities against market value. Limited to service firms with goodwill.	Goodwill assets are understated relative to their theoretical value.

Table 2
Overview of study population

Publicly traded companies listed on Compustat with at least \$20 million in assets, a share price of \$1 and \$5 million in sales were selected for this study to eliminate smaller, more speculative and inactive companies. Return on Assets (ROA) is operating income before depreciation and amortization divided by average assets.

Year	Companies selected	Assets beginning of year	Average beginning assets	Goodwill beginning of year	Average beginning goodwill	Beginning of year goodwill as % of assets	Average ROA
1995	2,652	10,634,953	4,010	156,674	59	1.47%	13.52%
1996	2,986	12,996,179	4,352	172,546	58	1.33%	13.06%
1997	3,390	15,111,693	4,458	242,881	72	1.61%	12.73%
1998	3,640	16,790,999	4,613	325,667	89	1.94%	11.54%
1999	3,925	20,981,758	5,346	464,872	118	2.22%	10.95%
2000	4,173	25,524,547	6,117	674,422	162	2.64%	10.24%
2001	4,385	31,676,147	7,224	1,045,970	239	3.30%	7.68%
2002	4,420	37,306,619	8,440	1,129,075	255	3.03%	8.62%
2003	4,594	42,014,932	9,146	1,648,537	359	3.92%	9.38%
2004	4,354	38,525,819	8,848	1,695,474	389	4.40%	9.91%

Table 3
Performance analysis

All companies reported on Compustat from 1995 to 2004 with at least \$20 million in assets, a stock price of \$1 and sales of \$5 million were selected for this study. The result was some 38,519 years of operating history. Return on assets (ROA) is defined as operating income before depreciation and amortization scaled by average assets. Companies were classified by industry using the Fama and French (1995) system. Companies with goodwill had at least one percent of its assets in goodwill. Companies without goodwill had less than one percent of its assets in goodwill. High goodwill companies were those with at least twenty percent of their assets in goodwill. High goodwill companies are a lesser included set of companies with goodwill. The winner column indicates whether companies with goodwill (GW) outperformed those without goodwill (NoGW). Entries in italics are in industries for which there were less than twenty operating years with goodwill or high goodwill respectively, so no conclusions were drawn about rent generation in those instances. They are included in this table for completeness only.

Industry	Cos with goodwill			Cos with no goodwill			Cos with high goodwill			Goodwill v. no goodwill			High goodwill v. no goodwill		
	n	Mean ROA	Std.dev. ROA	n	Mean ROA	Std.dev. ROA	n	Mean ROA	Std.Dev. ROA	t-stat	p-value	winner	t-stat	p-value	winner
Aero	105	13.8%	5.2%	38	13.60%	7.31%	33	14.15%	3.40%	0.1318	0.4483		0.4150	0.3372	
Agric	53	13.3%	7.6%	72	9.21%	7.15%	<i>15</i>	<i>14.70%</i>	<i>5.39%</i>	3.0760	0.0010	*** GW	<i>3.3745</i>	<i>0.0004</i>	*** GW
Autos	324	13.2%	8.6%	302	14.77%	10.20%	91	13.33%	10.96%	-2.1293	0.0166	** NoGW	-1.1161	0.1314	
Banks	77	10.6%	9.5%	5069	3.00%	2.87%	<i>16</i>	<i>12.68%</i>	<i>8.17%</i>	6.9543	0.0000	*** GW	<i>4.7384</i>	<i>0.0000</i>	*** GW
Beer	84	16.0%	7.3%	84	14.27%	7.51%	7	<i>14.83%</i>	<i>5.45%</i>	1.5206	0.0643	* GW	<i>0.2526</i>	<i>0.4013</i>	
BldMt	339	15.5%	7.1%	332	15.53%	8.75%	69	14.84%	6.60%	0.0000	0.5000		-0.7432	0.2296	
Books	184	15.8%	11.6%	152	16.86%	11.35%	125	14.86%	6.60%	-0.8765	0.1894		-1.8288	0.0336	** NoGW
Boxes	96	15.5%	5.5%	48	14.28%	4.63%	30	12.56%	2.33%	1.4251	0.0764	* GW	-2.1712	0.0150	** NoGW
BusSv	1828	12.2%	15.9%	1921	6.56%	22.50%	628	11.19%	12.55%	8.9388	0.0000	*** GW	6.4559	0.0000	*** GW
Chem	389	12.6%	8.2%	344	15.45%	9.54%	80	14.55%	9.69%	-4.2548	0.0000	*** NoGW	-0.7505	0.2260	
Chips	815	9.2%	13.0%	1427	9.70%	16.98%	165	6.19%	11.77%	-0.8127	0.3090		-3.4391	0.0003	*** NoGW
Clths	241	14.7%	9.9%	308	15.42%	12.79%	35	14.96%	9.01%	-0.7348	0.2327		-0.2725	0.3936	
Cnstr	238	12.0%	6.9%	175	12.33%	10.46%	55	10.18%	6.03%	-0.3189	0.3745		-1.8957	0.0287	** NoGW
<i>Coal</i>	<i>1</i>	<i>24.8%</i>	<i>0.0%</i>	<i>45</i>	<i>11.67%</i>	<i>11.23%</i>	<i>1</i>	<i>24.78%</i>	<i>0.00%</i>	<i>7.8312</i>	<i>0.0000</i>	*** GW	<i>7.8312</i>	<i>0.0000</i>	*** GW
Comps	428	7.5%	12.1%	912	5.92%	20.02%	92	6.94%	11.82%	1.7514	0.0401	** GW	0.7289	0.2327	
Drugs	419	10.0%	18.1%	922	-3.70%	26.19%	93	7.32%	11.87%	11.0604	0.0000	*** GW	7.3321	0.0000	*** GW
ElcEq	297	12.9%	10.2%	275	8.13%	20.00%	93	12.31%	8.41%	3.5594	0.0000	*** GW	2.8086	0.0025	*** GW
Enrgy	287	15.7%	7.7%	928	17.72%	13.05%	33	16.33%	5.76%	-3.2777	0.0005	*** NoGW	-1.2748	0.1020	
FabPr	65	13.5%	6.8%	67	12.70%	6.94%	30	12.31%	5.69%	0.6675	0.2514		-0.2908	0.3859	
Fin	200	18.6%	16.2%	856	14.16%	24.35%	70	21.07%	14.54%	3.1357	0.0008	*** GW	3.5861	0.0000	*** GW

*** Statistically significant at the .01 level

** Statistically significant at the .05 level

* Statistically significant at the .10 level

Table 2
Performance analysis – continued

Industry	Cos with goodwill			Cos with no goodwill			Cos with high goodwill			Goodwill v. no goodwill				High goodwill v. no goodwill			
	n	Mean ROA	Std.dev. ROA	n	Mean ROA	Std.dev. ROA	n	Mean ROA	Std.Dev. ROA	t-stat	p-value			t-stat	p-value		
Food	191	16.0%	7.9%	336	14.48%	9.87%	57	15.54%	5.26%	1.9216	0.0274	**	GW	1.2038	0.1151		
Fun	192	15.7%	11.4%	248	15.76%	12.09%	39	17.29%	11.70%	-0.0712	0.4960			0.7557	0.2236		
Gold	11	9.6%	8.6%	180	5.12%	14.28%	2	13.74%	3.64%	1.6087	0.0537	*	GW	3.0949	0.0010	***	GW
Guns	46	10.7%	6.5%	22	18.33%	10.44%	18	8.98%	4.98%	-3.1714	0.0011	***	NoGW	-3.7157	0.0000	***	NoGW
Hlth	361	16.1%	11.9%	194	13.64%	15.22%	196	18.00%	10.57%	1.9154	0.0274	**	GW	3.2827	0.0005	***	GW
Hshld	264	15.6%	10.2%	340	15.54%	8.86%	61	16.38%	11.01%	0.1140	0.4562			0.5640	0.2877		
Insur	460	6.7%	8.2%	844	6.19%	8.01%	66	13.34%	7.94%	1.1023	0.1539			7.0409	0.0000	***	GW
LabEq	308	10.5%	11.8%	409	9.35%	15.56%	78	13.57%	12.13%	1.1063	0.1446			2.6806	0.0037	***	GW
Mach	689	12.7%	8.3%	572	11.99%	13.58%	200	12.81%	5.67%	1.0454	0.1469			1.1797	0.1190		
Meals	246	17.4%	7.8%	414	14.87%	8.81%	27	15.94%	5.67%	3.8481	0.0000	***	GW	0.9114	0.1814		
MedEq	417	13.2%	15.0%	440	5.65%	20.17%	168	13.71%	11.95%	6.2554	0.0000	***	GW	6.0504	0.0000	***	GW
Mines	54	15.4%	6.1%	110	15.05%	10.05%	6	16.54%	2.76%	0.3087	0.3483			1.0074	0.1562		
Misc	164	12.2%	9.1%	97	12.91%	14.98%	39	12.66%	7.98%	-0.4347	0.3336			-0.1258	0.4483		
Paper	257	14.8%	7.4%	246	13.67%	7.60%	73	13.16%	4.41%	1.6340	0.0516	*	GW	-0.7204	0.2358		
PerSv	206	15.6%	11.5%	146	17.12%	13.30%	92	15.70%	11.29%	-1.1399	0.1271			-0.8811	0.1894		
Retail	747	14.1%	9.9%	1256	16.21%	11.74%	150	12.61%	9.11%	-4.3417	0.0000	***	NoGW	-4.4212	0.0000	***	NoGW
RIEst	64	11.8%	9.9%	236	8.04%	8.61%	22	18.01%	9.12%	2.7608	0.0029	***	GW	4.9270	0.0000	***	GW
Rubbr	194	14.8%	5.9%	135	13.26%	8.79%	58	13.60%	4.13%	1.7769	0.0384	**	GW	0.3653	0.3557		
Ships	39	13.2%	11.2%	41	9.90%	8.59%	18	13.45%	6.01%	1.4709	0.0708	*	GW	1.8196	0.0287	**	GW
Smoke	15	21.3%	3.9%	47	27.86%	2.79%	12	21.74%	4.23%	-5.9689	0.0000	***	NoGW	-4.7548	0.0000	***	NoGW
Soda	48	15.9%	6.7%	51	14.15%	8.77%	5	12.81%	2.71%	1.1362	0.1271			-0.7766	0.2177		
Steel	285	13.3%	7.2%	373	11.18%	9.44%	43	14.64%	6.94%	3.2989	0.0005	***	GW	2.9680	0.0015	***	GW
Telcm	592	11.6%	11.0%	850	11.21%	15.49%	173	10.73%	9.68%	0.6014	0.2743			-0.5288	0.2981		
Toys	129	14.1%	7.8%	139	14.54%	19.40%	29	13.16%	5.56%	-0.2693	0.3936			-0.7104	0.2389		
Trans	423	13.7%	8.0%	676	13.60%	9.40%	82	10.76%	9.60%	0.2629	0.3974			-2.5355	0.0055	***	NoGW
Txtls	83	12.8%	8.6%	83	14.85%	11.18%	18	9.71%	10.31%	-1.3393	0.0918	*	NoGW	-1.8881	0.0294	**	NoGW
Util	152	10.9%	8.2%	1387	10.78%	4.02%	69	12.53%	9.00%	0.1044	0.4602			1.6072	0.0537	*	GW
Whsl	712	11.1%	7.8%	551	10.85%	10.71%	157	11.62%	7.39%	0.3695	0.3520			1.0326	0.1515		

*** Statistically significant at the .01 level

** Statistically significant at the .05 level

* Statistically significant at the .10 level

Table 4
Summary of industry results

This table summarizes whether goodwill generates rent equal to or greater than other assets on an industry by industry basis. Companies with goodwill had at least one percent goodwill among their assets. Companies without goodwill had less than one percent goodwill. High goodwill companies, a subset of companies with goodwill, had at least twenty percent goodwill.

Condition	Goodwill vs. no ----- goodwill companies -----		High goodwill vs. ---no goodwill companies----	
	Industries	n	Industries	n
Industries excluded because of insufficient data.	Coal, Gold, Smoke	3	Agric, Banks, Beer, Coal, Gold, Guns, Mines, Smoke, Soda & Txtls	10
Industries in which companies without goodwill outperform those with goodwill.	Autos, Chem, Enrgy, Guns, Retail & Txtls	6	Books, Boxes, Chips, Cnstr, Retail & Trans	6
Industries in which there is no statistically significant difference in the performance of companies with and without goodwill.	Aero, BldMt, Books, Chips, Clths, Cnstr, FabPr, Fun, Hshld, Insur, LabEq, Mach, Mines, Misc, PerSv, Soda, Telcm, Toys, Trans, Util & Whlsl	21	Aero, Autos, BldMt, Chem, Clths, Comps, Enrgy, FabPr, Food, Fun, Hshld, Mach, Meals, Misc, Paper, PerSv, Rubbr, Telcm, Toys & Whlsl	20
Industries in which companies with goodwill outperform those without goodwill.	Agric, Banks, Beer, Boxes, BusSv, Comps, Drugs, ElcEq, Fin, Food, Hlth, Meals, MedEq, Paper, RIEst, Rubbr, Ships & Steel	18	BusSv, Drugs, ElcEq, Fin, Hlth, Insur, LabEq, MedEq, RIEst, Ships, Steel & Util	12
	Totals	48		48

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Appendix A Industry classifications

This appendix is based on the Fama and French (1997) industry classifications plus the classification of the omitted SIC code of 3690 classified as electrical equipment, ElcEq.

SIC range	Code	Industry	SIC range	Code	Industry
0100-0799	Agric	Agriculture	2850-2899	Chems	Chemicals
0800-0899	BldMt	Construction Materials	2900-2911	Enrgy	Petroleum and Natural Gas
0900-0999	Toys	Recreational Products	2950-2952	BldMt	Construction Materials
1000-1039	Mines	Nonmetallic Mining	2990-2999	Enrgy	Petroleum and Natural Gas
1040-1049	Gold	Precious Metals	3000-3000	Rubbr	Rubber and Plastic Products
1060-1099	Mines	Nonmetallic Mining	3010-3011	Autos	Automobiles and Trucks
1200-1299	Coal	Coal	3020-3021	Clths	Apprel
1310-1389	Enrgy	Petroleum and Natural Gas	3050-3099	Rubbr	Rubber and Plastic Products
1400-1499	Mines	Nonmetallic Mining	3100-3111	Clths	Apprel
1500-1549	Cnstr	Construction	3130-3159	Clths	Apprel
1600-1699	Cnstr	Construction	3160-3199	Hshld	Consumer Goods
1700-1799	Cnstr	Construction	3200-3219	BldMt	Construction Materials
2000-2046	Food	Food Products	3210-3221	Boxes	Shipping Containers
2047-2047	Hshld	Consumer Goods	3229-3231	Hshld	Consumer Goods
2048-2048	Agric	Agriculture	3240-3259	BldMt	Construction Materials
2050-2063	Food	Food Products	3260-3260	Hshld	Consumer Goods
2064-2068	Soda	Candy and Soda	3261-3264	BldMt	Construction Materials
2070-2079	Food	Food Products	3262-3263	Hshld	Consumer Goods
2080-2085	Beer	Alcoholic Beverages	3269-3269	Hshld	Consumer Goods
2086-2087	Soda	Candy and Soda	3270-3299	BldMt	Construction Materials
2090-2095	Food	Food Products	3300-3369	Steel	Steel Works, etc.
2096-2097	Soda	Candy and Soda	3390-3399	Steel	Steel Works, etc.
2098-2099	Food	Food Products	3400-3400	FabPr	Fabricated Products
2100-2199	Smoke	Tobacco Products	3410-3412	Boxes	Shipping Containers
2200-2295	Txtls	Textiles	3420-3442	BldMt	Construction Materials
2296-2296	Autos	Automobiles and Trucks	3443-3444	FabPr	Fabricated Products
2297-2299	Txtls	Textiles	3446-3452	BldMt	Construction Materials
2300-2390	Clths	Apprel	3460-3479	FabPr	Fabricated Products
2391-2392	Hshld	Consumer Goods	3480-3489	Guns	Defense
2393-2395	Txtls	Textiles	3490-3499	BldMt	Construction Materials
2396-2396	Autos	Automobiles and Trucks	3510-3536	Mach	Machinery
2397-2399	Txtls	Textiles	3537-3537	Autos	Automobiles and Trucks
2400-2439	BldMt	Construction Materials	3540-3569	Mach	Machinery
2440-2449	Boxes	Shipping Containers	3570-3579	Comps	Computers
2450-2459	BldMt	Construction Materials	3580-3599	Mach	Machinery
2490-2499	BldMt	Construction Materials	3600-3621	ElcEq	Electrical Equipment
2510-2519	Hshld	Consumer Goods	3622-3622	Chips	Electronic Equipment
2520-2549	Paper	Business Supplies	3623-3629	ElcEq	Electrical Equipment
2590-2599	Hshld	Consumer Goods	3630-3639	Hshld	Consumer Goods
2600-2639	Paper	Business Supplies	3640-3646	ElcEq	Electrical Equipment
2640-2659	Boxes	Shipping Containers	3647-3647	Autos	Automobiles and Trucks
2670-2699	Paper	Business Supplies	3648-3649	ElcEq	Electrical Equipment
2700-2749	Books	Printing and Publishing	3650-3652	Toys	Recreational Products
2750-2759	BusSv	Business Services	3660-3660	ElcEq	Electrical Equipment
2760-2761	Paper	Business Supplies	3661-3679	Chips	Electronic Equipment
2770-2799	Books	Printing and Publishing	3680-3689	Comps	Computers
2800-2829	Chems	Chemicals	3691-3692	ElcEq	Electrical Equipment
2830-2836	Drugs	Pharmaceutical Products	3693-3693	MedEq	Medical Equipment
2840-2844	Hshld	Consumer Goods	3694-3694	Autos	Automobiles and Trucks

Appendix A – continued

SIC range	Code	Industry	SIC range	Code	Industry
3695-3695	Comps	Computers	5800-5813	Meals	Restaurants, Hotel, Motel
3690-3690	ElcEq	Electrical Equipment	5890-5890	Meals	Restaurants, Hotel, Motel
3699-3699	ElcEq	Electrical Equipment	5900-5999	Retail	Retail
3700-3716	Autos	Automobiles and Trucks	6000-6099	Banks	Banking
3720-3729	Aero	Aircraft	6100-6199	Banks	Banking
3730-3731	Ships	Shipbuilding, Railroad Eq.	6200-6299	Fin	Trading
3732-3732	Toys	Recreational Products	6300-6399	Insur	Insurance
3740-3743	Ships	Shipbuilding, Railroad Eq.	6400-6411	Insur	Insurance
3750-3751	Hshld	Consumer Goods	6500-6553	RIEst	Real Estate
3760-3769	Guns	Defense	6700-6799	Fin	Trading
3790-3792	Autos	Automobiles and Trucks	7000-7019	Meals	Restaurants, Hotel, Motel
3795-3795	Guns	Defense	7020-7021	PerSv	Personal Services
3799-3799	Autos	Automobiles and Trucks	7030-7039	PerSv	Personal Services
3800-3800	Hshld	Consumer Goods	7040-7049	Meals	Restaurants, Hotel, Motel
3810-3810	Chips	Electronic Equipment	7200-7212	PerSv	Personal Services
3811-3811	LabEq	Measuring and Control Eq.	7213-7213	Meals	Restaurants, Hotel, Motel
3812-3812	Chips	Electronic Equipment	7215-7299	PerSv	Personal Services
3820-3830	LabEq	Measuring and Control Eq.	7300-7372	BusSv	Business Services
3840-3851	MedEq	Medical Equipment	7373-7373	Comps	Computers
3860-3879	Hshld	Consumer Goods	7374-7394	BusSv	Business Services
3900-3900	Misc	Miscellaneous	7395-7395	PerSv	Personal Services
3910-3919	Hshld	Consumer Goods	7397-7397	BusSv	Business Services
3930-3949	Toys	Recreational Products	7399-7399	BusSv	Business Services
3950-3955	Paper	Business Supplies	7500-7500	PerSv	Personal Services
3960-3961	Hshld	Consumer Goods	7510-7519	BusSv	Business Services
3965-3965	Clths	Apprel	7520-7549	PerSv	Personal Services
3990-3990	Misc	Miscellaneous	7600-7699	PerSv	Personal Services
3991-3991	Hshld	Consumer Goods	7800-7841	Fun	Entertainment
3993-3993	BusSv	Business Services	7900-7999	Fun	Entertainment
3995-3995	Hshld	Consumer Goods	8000-8099	Hlth	Healthcare
3996-3996	BldMt	Construction Materials	8100-8199	PerSv	Personal Services
3999-3999	Misc	Miscellaneous	8200-8299	PerSv	Personal Services
4000-4099	Trans	Transportation	8300-8399	PerSv	Personal Services
4100-4199	Trans	Transportation	8400-8499	PerSv	Personal Services
4200-4299	Trans	Transportation	8600-8699	PerSv	Personal Services
4400-4499	Trans	Transportation	8700-8748	BusSv	Business Services
4500-4599	Trans	Transportation	8800-8899	PerSv	Personal Services
4600-4699	Trans	Transportation	8900-8999	BusSv	Business Services
4700-4799	Trans	Transportation	9900-9999	Misc	Miscellaneous
4800-4899	Telcm	Telecommunications	5800-5813	Meals	Restaurants, Hotel, Motel
4900-4999	Util	Utilities	5890-5890	Meals	Restaurants, Hotel, Motel
5000-5099	Whlsl	Wholesale	5900-5999	Retail	Retail
5100-5199	Whlsl	Wholesale	6000-6099	Banks	Banking
5200-5299	Retail	Retail	6100-6199	Banks	Banking
5300-5399	Retail	Retail	6200-6299	Fin	Trading
5400-5499	Retail	Retail	6300-6399	Insur	Insurance
5500-5599	Retail	Retail	6400-6411	Insur	Insurance
5600-5699	Retail	Retail	6500-6553	RIEst	Real Estate
5700-5736	Retail	Retail	6700-6799	Fin	Trading