

# On the Importance of Goodwill

## INVESTMENT PERSPECTIVE

Information in financial markets evolves over time. Items that were historically not meaningful may take on a first-order level of relevance as firms change and disclosure improves. Historically, goodwill accounted for only a small fraction of most companies' book equity, so many investors felt comfortable overlooking it. We believe that investors can no longer afford to ignore goodwill because more companies today carry goodwill, and its size relative to book equity is meaningful. In this paper, we discuss the evolution of goodwill and its impact on investment decisions and performance.

### What Is Goodwill?

Under current accounting rules, when one firm acquires another, the difference between the purchase price and the fair value of the net identifiable assets of the target firm is included as goodwill in the acquiror's accounting statements. This goodwill is recorded as an asset for the acquiror and incorporated into the book value of equity.

### Historical Accounting Treatment of Goodwill

Before 2001, firms engaged in acquisitions could choose between the pooling-of-interests method or purchase method to consolidate assets. Under the pooling method, assets and liabilities of the target firm are transferred to the acquiror at book value and no goodwill is recorded. Under the purchase method, the difference between the purchase price and book value of the target firm is recorded as goodwill. Financial Accounting Standards Board (FASB) Statement 141 ended the pooling method effective June 30, 2001.

Goodwill is often regarded as the most important intangible asset on a firm's balance sheet. The Accounting Principles Board (APB) Opinion No. 17, issued in 1970, required goodwill to be properly recorded and then amortized over its life (for historical details about APB 17, see Andrews, 1981, 37-49). In 1995, the Statement of Financial Accounting Standards (SFAS) 121 added more precision to the recognition and amortization guidance but retained the amortization rule. The most significant change to goodwill accounting took place in 2001 with issuance of SFAS 142. Under SFAS 142, instead of amortizing goodwill, firms were required to conduct an annual impairment test: If the fair value of the assets is lower than the carrying value, the firm is required to take an impairment charge.



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# How Large Is Goodwill?

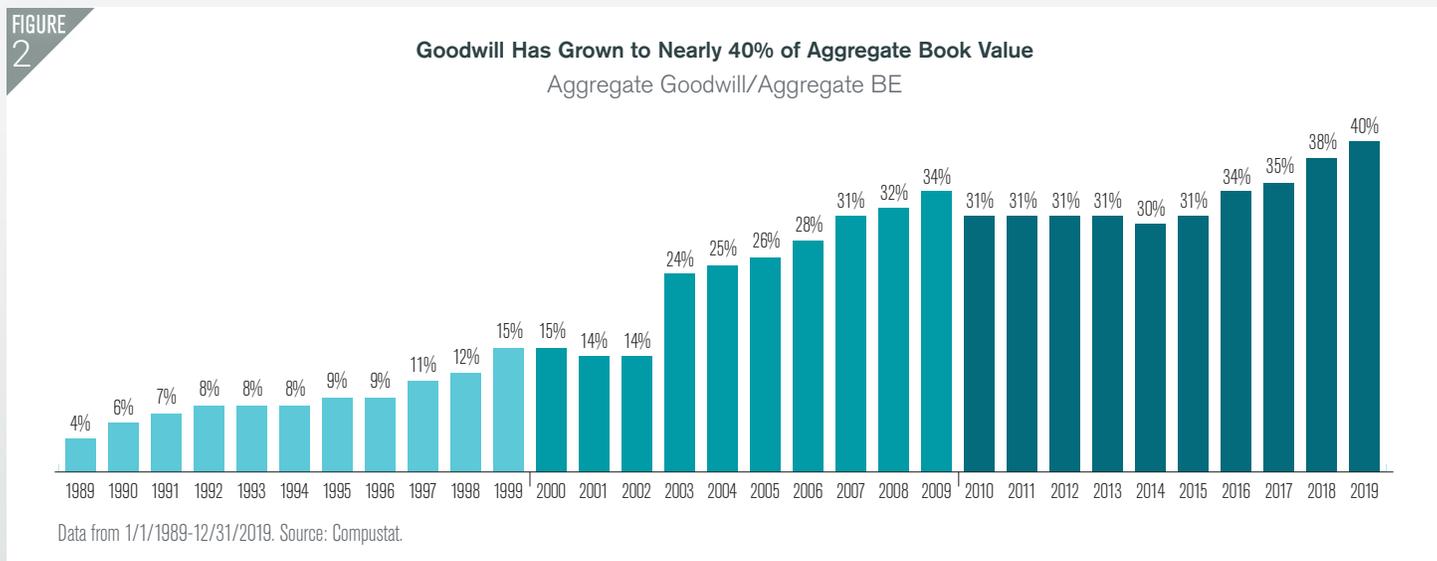
Measuring the importance of goodwill over time involves two challenges. First, since firms could choose between pooling versus purchase accounting methods before 2001, not all firms report goodwill. Second, even when goodwill is recorded, it is not always reported in common databases. Even though reporting guidance for goodwill started in 1971, Compustat did not begin recording it until 1989. Even so, the coverage is incomplete. For example, IBM declared goodwill of \$762 million in its annual report for fiscal year

1987, but Compustat did not report this information. In 1989, 2,355 of 5,236 firms with valid book values had missing goodwill data, while 979 firms had non-missing and non-zero goodwill.

**Figure 1** shows the fraction of firms with non-missing goodwill over 1989-2019. The percentage increases over time, rising from 55% in 1989 to 74% in 2002. In 2003, the fraction rises to 88%. From 2004 onward, over 90% of firms reported goodwill.



To provide perspective on goodwill's rising importance, we calculate the aggregate value of goodwill across all firms, scaled by the aggregate value of book equity. **Figure 2** reports this ratio over time. In 1989, the aggregate value of goodwill as a proportion of book equity was about 4%. It increased steadily to 14% in 2002. As expected, given the coverage statistics in **Figure 1**, there was a sharp increase to 24% in 2003, and steady (but non-monotonic) increases thereafter. In 2004, the aggregate value of goodwill represented almost 25% of the aggregate value of book equity. By 2019, goodwill comprised 40% of aggregate book equity, no longer a second-order effect.



## Economic Underpinnings of Goodwill

These data suggest goodwill is an economically large quantity, more so in today's markets than historically. Goodwill arises due to the excess payment relative to the fair value of the net identifiable assets of a target firm. This excess payment reflects the target firm's expected profits, and some combination of synergies derived from the transaction and/or overpayment.<sup>1</sup> Synergies and overpayment represent a premium payment relative to the market value of the target firm. To cleanly understand the effects, it is useful to separate the overpayment from the target firm's profits and synergies.

First, consider the case where the premium reflects the present value of the target firm's profits and all expected synergies, with no overpayment to shareholders of the target firm. Synergies may be achieved through two sources: 1) incremental revenue enhancement, where the future revenues of the combined firm are greater than the sum of the revenues of the standalone target and acquirer, and 2) cost reduction, where the future costs of the combined firm are lower than the sum of the standalone costs of the target and acquirer. Regardless of the source, expected synergies are reflected in expected incremental future profits. In an informationally efficient market, these expected synergistic profits, discounted at an embedded and agreed upon discount rate, are reflected in the acquisition price. Therefore, the discounted value of the expected synergies are booked as goodwill.

Second, consider the case where the entire premium is due to overpayment and there are no realized synergies. Since the overpayment is recorded as goodwill, it ultimately has to be charged against future profits, either by amortization or impairment. Regardless, for owners of the firm, the true value of the assets is lower than that recorded as book value because of wealth transfers from acquirer shareholders to target shareholders.<sup>2</sup>

### Implications for Investment Strategies

The bookkeeping and economics we describe above have important implications for investment strategies that splice value and profitability. Value strategies typically require a measurement of book value and are therefore sensitive to how it is calculated. Profitability strategies attempt to capture expected (future) profitability and are therefore affected by business combinations and expected synergies.

Consider the first case where the acquisition premium reflects the full value of the target firm's profits and the expected synergies with no overpayment. In this instance, synergies are reflected in both goodwill and measures of expected future profitability. The discounted value of the estimated profits of the target company are

part of the goodwill. An investment strategy that deploys book-to-market ratios (to measure value) and expected profitability therefore effectively double-counts the target company's expected profits and overall expected synergies.

Now consider the second case where there are no synergies and the acquisition premium is due entirely to overpayment. The book value of the assets is overstated by the amount of the overpayment. This results in a potential misclassification of firms where book value appears in a valuation ratio. The academic evidence on mergers and acquisitions suggests acquisition premiums likely reflect some combination of these extremes. Regardless, the implication of these arguments is that adjusting for goodwill is important for investment strategies that employ a "stock" of capital, such as book value, and a "flow" variable, such as expected profitability.<sup>3</sup>

### The Impact of Goodwill Adjustment

To understand the effects of goodwill accounting on value strategies, we examine portfolios with and without adjustments for goodwill. We follow standard academic procedures, classifying all common stocks (excluding utilities and real estate investment trusts) into small- and large-capitalization groups based on median New York Stock Exchange market capitalization. The sample starts in July 1989, when Compustat started reporting goodwill for a reasonable sample of firms. All portfolios are rebalanced annually, at the end of June.

As a preliminary exercise, we first compute market-cap-weighted returns to simple quartile portfolios based on the ratio of goodwill to book value (GW/BE). **Figure 3** shows that the average difference in the return of the high GW/BE to low GW/BE portfolio in small and large stocks is -4.1 and -9.1 basis points per month. Unsurprisingly, given the data issues described above and the short sample period, the standard deviation of these portfolio returns is high—347.6 and 244.6 basis points respectively. Nonetheless, the magnitude of the underperformance of the high goodwill portfolio and its consistency between small and large stocks is notable.

To provide more direct evidence, we focus on conventional and goodwill-adjusted value strategies. Within each size group, we form quartile portfolios each June based on two metrics: 1) book-to-market (BM) ratios measured as the book value of equity in June scaled by the market value of equity in the prior December and 2) goodwill-adjusted book-to-market (GWBM) ratios in which the numerator is the book value of equity minus reported goodwill (and the same denominator).

<sup>1</sup>The Financial Accounting Standards Board (FASB) refers to core goodwill as comprising "going concern goodwill" derived from the target's expected profit stream and "combination goodwill" as originating from synergies.

<sup>2</sup>Perhaps the most famous case of such goodwill impairment comes from AOL's acquisition of Time Warner in January 2000. AOL paid an estimated premium of about 70% for Time Warner's assets (see, for example, Barth and Stockton, 2000). The combined firm of AOL Time Warner adopted SFAS 142 in January 2002 when the reporting standard took effect. In its Q1-2002 10-Q filing with the Securities and Exchange Commission, the firm took a charge of \$54 billion to reduce its goodwill from the acquisition. In Q4-2002, the firm took a second charge of \$44.7 billion. Both charges reflected the lack of synergies in the transaction.

<sup>3</sup>A secondary reason to exclude goodwill from the computation of book value is that it subjects the investor to the vagaries of accounting conventions over time. For instance, a traditional value strategy that uses book values would include goodwill, net of accumulated amortization before 2001. But after 2001, such a strategy would use goodwill, net of accumulated impairment. The change from amortization to impairment would reclassify firms in an arbitrary manner, generating portfolio turnover purely as an artifact of changing accounting conventions.

The second row of **Figure 3** shows the spread in returns between high BM and low BM firms over the sample period, a “standard” value premium. The average spread in small firms is 25.3 basis points with a standard deviation of 402.5 basis points. In large firms, the spread is -0.6 basis points with a standard deviation of 371.7 basis points.<sup>4</sup>

The third row shows the difference in returns between high and low goodwill-adjusted book to market ratio portfolios (GWBM). In small stocks, the return difference rises to 27.1 basis points, and in large stocks, the spread is now positive at 2.8 basis points.

For long-only investors, a more relevant way to assess the impact of the goodwill adjustment is to look directly at value stocks (i.e., high BM and/or high GWBM portfolios). The last row of **Figure 3** shows differences in portfolio returns between high GWBM and high BM portfolios, using BM breakpoints for both portfolios.

In small stocks, the goodwill-adjusted value portfolio (GWBM) has returns 2.7 basis points higher than the standard value portfolio (BM). In large stocks, the difference is 3.5 basis points.

The standard deviations and standard errors of the portfolio returns that we report are high, which is to be expected given the inconsistent reporting requirements for goodwill and the short sample period. For readers concerned with statistical significance, we offer a reminder of the difference between classical “frequentist” statistics and the Bayesian approach. A frequentist would say the differences in portfolio returns are not statistically different from zero and therefore should not be acted on. In the Bayesian view of the world, the prior belief that goodwill should matter for portfolios is quite strong. That belief is based on economic arguments. The estimates that we report allow us to update our prior belief and reinforce our view that adjustments for goodwill are important.

FIGURE 3

**Value Portfolios That Adjust for Goodwill Have Outperformed**

Comparison of Average Monthly Returns

COMPARISON	SMALL STOCKS		LARGE STOCKS	
	Average Monthly Return Spread (bps)	Standard Deviation (bps)	Average Monthly Return Spread (bps)	Standard Deviation (bps)
<b>Goodwill</b> <i>High GW/BE – Low GW/BE</i>	-4.1	347.6	-9.1	244.6
<b>Value</b> <i>High BM – Low BM</i>	25.3	402.5	-0.6	371.7
<b>Goodwill-Adjusted Value</b> <i>High GWBM – Low GWBM</i>	27.1	384.0	2.8	332.9
<b>Goodwill-Adjusted Value vs. Value</b> <i>High GWBM – High BM</i>	2.7	80.1	3.5	112.2

Data from 7/1/1989-12/31/2019. Small- and large-cap stocks based on NYSE breakpoints, excluding utilities and REITs. Portfolio assignments are based on standard measures of book-to-market (BM) ratios, the ratio of goodwill to book equity (GW/BE), and goodwill-adjusted book equity scaled by market equity (GWBM). Quartile portfolios are formed each June and rebalanced annually. Source: Compustat.

## Recognizing Goodwill Is Key

For investment strategies that consider “stock” variables originating from a balance sheet and “flow” variables originating from an income statement, acquisitions introduce complexities into the proper measurement of both. Recognizing goodwill from such transactions is important because it influences both the stock and the flow. Targeting high book-to-market companies without removing goodwill can lead to an unintentional bias toward companies active in mergers and acquisitions. Without this adjustment, high book-to-market companies with large goodwill balances may be misidentified as

value companies, creating an adverse bias toward companies that engage in mergers/acquisitions and tend to underperform.

One way to put goodwill’s influence into perspective is to compare the magnitude of its impact to an expense ratio. The average performance improvement from removing goodwill is about 3 basis points per month. That translates to a return differential of about 36 basis points per year, which is greater than the expense ratio of some mutual funds and ETFs that provide exposure to value and expected profitability.

<sup>4</sup>The difference in returns between high and low book-to-market portfolios over the same sample period (defined using 30th and 70th percentiles instead of quartiles) for small and large stocks from Ken French’s database are comparable, 31 and -7 basis points respectively.

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He serves as a consultant to Avantis Investors and was previously a consultant to Dimensional Fund Advisors (2005-2019) and AJO Partners. He sits on the investment committees of several registered investment advisors. He is also a regular speaker at academic and practitioner conferences and has given numerous presentations to sovereign wealth funds, endowments, foundations, family offices, defined-benefit plans, defined-contribution plans, and registered investment advisors.

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As Chief Investment Officer of Avantis Investors,<sup>™</sup> Eduardo is responsible for directing the research, design and implementation of our investment strategies, providing oversight of the investment team and the firm's marketing initiatives, and interacting with clients.

Before Avantis Investors' establishment in 2019, Eduardo was Co-Chief Executive Officer, Co-Chief Investment Officer and Director at Dimensional Fund Advisors (DFA) until 2017. While at DFA, Eduardo provided oversight across investment, client service, marketing, and operational functions. He oversaw day-to-day operations, directed the engineering and execution of investment portfolios and was involved in the design, development and delivery of research that informed the firm's investment approach as well as its application through portfolio management and trading.

Eduardo earned a Ph.D. in Aeronautics from the California Institute of Technology, a Master of Science in Engineering from Brown University and a Diploma de Honor in Civil Engineering from the Universidad de Buenos Aires. Eduardo is member of the California Institute of Technology Board of Trustees. He is the recipient of the California Institute of Technology's William F. Ballhaus Prize for outstanding doctoral dissertation in Aeronautics and Ernest E. Sechler Memorial Award in Aeronautics for significant contributions to teaching and research.

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