

***Excessive Valuation of Goodwill and Other Intangible Assets
Makes Earnings of S&P 500 Portfolios Questionable***

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ABSTRACT

This paper examined the S&P 500 for companies that exhibited excess valuation of Goodwill and Other Intangible Assets as a percentage of capitalization. S&P 500 companies were segmented into two portfolios. One portfolio held the defined excess valuation companies (GWI49) while the other portfolio held the alternatives (GWI350). Six financial variables were subjected to z tests. These were (1) Gross Margin; (2) EBIT Margin; (3) Price to Sales; (4) Five-year Total Return; (5) Unadjusted Beta; and (6) Unadjusted Alpha. The portfolios, as measured by beta, were not statistically significantly different and thus of equal risk. However, all other variables were statistically significantly different. Based on the data and methodology used, the results question the appropriateness of the carrying value of Goodwill and Other Intangible Assets and the resulting ex-post earnings of the segmented GWI49 portfolio.

Key words: Goodwill, Intangible assets, questionable ex-post earnings

JEL Classification: M41, M42

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Generally Accepted Accounting Principles (GAAP) are in place to assure that companies report data in a consistent and understandable way. Nonetheless, companies can affect reported earnings in many ways, including choices made regarding the valuation of Goodwill and Other Intangible Assets (GWI).

About one third of the 2024 shareholder lawsuits brought alleging GAAP errors cited asset valuation and impairment as a cause of action.¹ One class of assets

¹ BV Wire Issue #271-4 dated April 23, 2025

particularly subject to questionable valuation is Goodwill and Other Intangible Assets (GWI).

GAAP requires periodic impairment testing to ensure that balance sheet carrying value approximates GWI's current economic value. However, since there is no market in which intangible assets are traded and estimating future cash flows attributable to an intangible asset is highly subjective, significant judgment by management and auditors is required to arrive at carrying value.

Since valuation of intangible assets is difficult and subjective, a portfolio of companies in the S&P 500 with a large percentage of Goodwill and Other Intangible Assets is likely to exhibit financial and market characteristics inferior to those with few such assets. This paper tests whether those characteristics do, in fact, differ.

Method: 399 companies with required information were included in the S&P 500 continuously from December 31, 2018, through December 29, 2023, according to data supplied by Ford Equity Research.² The analysis of GWI as a percentage of capitalization was applied to those companies to determine the impact of GWI.

The companies were separated into two portfolios:

- GWI49 consists of the 49 companies whose capitalization percentage is one standard deviation or more of the mean capitalization percentage of the overall sample.
- The remaining 350 companies were placed into a portfolio denoted GWI350.

Financial Data Variables

The expected impact of GWI on financial performance data has been noted previously—higher GWI as a percentage of assets is expected to be correlated with lower portfolio performance. Two scenarios were studied in the analysis:

- **Gross margin** analysis helps assess the profitability of company activities (shown in Appendix 2, tables 1 and 2)
- **EBIT margin** analysis helps assess profitability before interest and taxes but after GWI. Companies and investors can determine whether operating costs and overhead are in check and whether enough profit is generated

² Ford Equity Research, a data vendor recognized as an institutional vendor of data to investment managers with proprietary models for investment managers globally. Ford supplied the data used in this study and is a subsidiary of Frank Russell Company, itself a part of the London Stock Exchange Group. (See Ford 2023)

from sales using EBIT margin. It also provides a matrix to help understand the impact of GWI (shown in Appendix 2, tables 3 through 6)

Data was subjected to z tests with two tailed results showing statistical significance (SS) at the 0.05 and 0.10 levels with noted means and standard deviations.

Comment on Financial Data Variables

The twelve items shown in Appendix 2, tables 1 and 2, show that the financial performance of GWI49 is inferior to the financial performance of GWI350. Profitability, as measured by both Gross Margin and EBIT Margin, are lower in each of the six years. Further, eight of the 12 data points were statistically significant at the 0.05 level. With the remaining four, except for the 2022 Gross Margin, significant at the 0.10 level. The GWI49 portfolio underperformed the GWI350 portfolio. Overall, the statistics show superior results for lower GWI companies.

Market Data Variables

The financial data above has limitations since one data item, EBIT Margin, is influenced by GWI accounting. Market data is not so impacted. Four key market variables were chosen for the market data analysis. The first, Price to Sales (Appendix 2 Table 3) is a valuation ratio. The other three—Five-year Total Return per annum (Table 4); Unadjusted Beta (Table 5); and Unadjusted Alpha (Table 6) are market behavior variables. The five-year total return per year, considers stock price change as well as all declared and paid dividends.

The Price to Sales Ratio (PSS) is a measure of value. It relates market price per share to sales (revenue) per share. The ratio is determined by the market, and the ratio should consider all traditional financial variables. The price to sales ratio is quite important to this study. It is the only valuation method that does not directly consider profitability which, in turn, is influenced by GWI. Thus, PSS allows for comparison without considering GWI.

Five-year total return is of paramount importance to investors. It allows investors to determine the risk-adjusted return of an investment versus its expected return utilizing beta, a measure of investment risk on an ex-post basis. Ex post Alpha measures a company's stock performance given the level of risk taken. Investors seek to find investments that yield positive alpha as an investment strategy.

Comment on Market Data

The two portfolios (GWI49 and GWI350) showed no statistically significant difference as measured by beta for the noted six years except at the 0.10 level for 2022. The portfolios are of equal risk.

All the other variables for each of the six years showed inferior performance of the GWI49 portfolio versus the GWI350 portfolio. All data showed statistical significance at the 0.05 level including Alpha, Five-Year returns per year and Price to Sales. These are interesting findings--the stock market values the GWI49 portfolio less than the GWI350 portfolio.

CONCLUSION

This paper separated stocks that had significant goodwill and intangible assets from those that did not. It has provided interesting results: Based on the data and methodology used, the results shown question the appropriateness of the carrying value of such assets and the resulting ex-post earnings of the segmented GWI portfolio.

The paper suggests that a thoughtful review of Goodwill and Other Intangible assets needs to be made by managements and auditors. It is not the intent of the authors to cite any specific company for this evaluation, but rather suggests review by managements of all securities in the GWI49 portfolio. Many companies in the GWI49 portfolio may be able to justify their underlying valuation of their GWI assets. Others need to supply a defensible valuation of those assets.

This point is hammered home by Cornerstone Research, which has noted that class action suits dealing with GWI are expanding: "For the first time since tracking began by Cornerstone Research, asset valuations and impairments are now the most common accounting-related securities class action filings and settlements."

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Appendix 1

GWI49 Companies Included in S&P 500

	Company name	Ticker symbol	Industry
1	AT&T INC	T	Telecommunications
2	AMERICAN AIRLINES GP	AAL	Airlines
3	BANK OF NEW YORK MELLON	BK	Fund Management
4	BAXTER INTL	BAX	Medical Supplies & Equipment
5	BORGWARNER INC	BWA	Auto Parts
6	BRISTOL-MYERS SQUIBB	BMJ	Drugs
7	CVS HEALTH	CVS	Drug Stores
8	CAMPBELL SOUP	CPB	Packaged Food
9	CELANESE CORP	CE	Chemicals
10	CENTENE CORP	CNC	Medical Services
11	CHARTER COMMUNICATIONS INC	CHTR	Broadcasting
12	CITIZENS FINANCIAL	CFG	Banks
13	COMCAST	CMCSA	Broadcasting
14	CONAGRA BRANDS	CAG	Packaged Food
15	DENTAL SUPPLY SIRONA	XRAY	Medical Supplies & Equipment
16	DAVITA INC	DVA	Medical Services
17	DELTA AIR LINES	DAL	Airlines
18	DISNEY WALT	DIS	Broadcasting
19	FMC	FMC	Chemicals
20	FIDELITY NATIONAL INF	FIS	Miscellaneous & Diverse Services
21	FRANKLIN RESOURCES	BEN	Fund Management
22	GENERAL MILLS	GIS	Packaged Food
23	GLOBAL PAYMENTS	GPN	Miscellaneous & Diverse Services
24	HASBRO	HAS	Recreation Products
25	HEWLETT PACKARD ENTERPRISES	HPE	Computers
26	INTL FLAVORING + FRAGRANCES	IFF	Chemicals
27	INVESCO LTD	IVZ	Fund Management
28	JOHNSON CONTROLS INTL	JCI	Diversified Manufacturing
29	KINDER MORGAN	KMI	Integrated Domestic Oil
30	KRAFT HEINZ	KHC	Packaged Food
31	LAB CORP OF AMERICA	LH	Medical Services
32	MEDTRONIC PLC	MDT	Medical Supplies & Equipment
33	MOLSON COORS BEV	TAP	Brewing
34	NEWS CORP	NWSA	Publishing
35	OMNICOM	OMC	Advertising
36	PFIZER	PFE	Drugs
37	QUEST DIAGNOSTIC	DGX	Medical Services
38	SMUCKER J M	SJM	Packaged Food
39	STANLEY BLACK & DECKER	SWK	Machine Tools
40	THE CIGNA GROUP	CI	Medical Services
41	TYSON FOODS	TSN	Meat Packing
42	UNITED AIRLINES	UAL	Airlines
43	V F CORP	VFC	Apparel
44	VERIZON COMMUNICATION S	VZ	Telecommunications
45	WALGREENS BOOTS	WBA	Drug Stores
46	WESTERN DIGITAL	WDC	Computers
47	WESTROCK	WRK	Paper
48	WHIRLPOOL	WHR	Home Appliances
49	ZIMMER BIOMET	ZBH	Medical Supplies & Equipment

Appendix 2

The data analysis is segmented into two categories. The first focuses on company financial data (Tables 1 and 2) while the second focuses on company market data (Tables 3 through 6). All financial results have been conducted on an equally weighted basis. The financial data analysis used each company's latest reported fiscal year.

There is a unique problem dealing with financial data as previously noted. Many traditional financial data items are impacted by GWI, making conclusions difficult. Therefore, the analysis is divided into two parts:

- GWI49 consisted of the 49 companies whose GWI capitalization percentage was greater than or equal to one standard deviation of the mean capitalization percentage of the overall sample.
- The remaining 350 companies were placed into a portfolio denoted GWI350

The data is presented in the following format: (Column 1) Year; (Column 2) GWI49 values (mean/ standard deviation); (Column 3) GWI350 values (mean/ standard deviation); (Column 4) z results of the statistical test of the GWI49 and the GWI350; (Column 5) the two tail p value; and (Column 6) statistical significance at the 0.05 and 0.10 levels.

The first part centers on two financial performance variables, Gross Margin (Table 1) and EBIT Margin (Table 2).

Table 1 Financial Performance Ratio (Gross Margin)

Year	GWI49	GWI350	Z	p	SS (.05/.10)
2023	42.3/21.9	50.4/24.7	-2.39	0.0179	YES/YES
2022	44.3/22.3	50.9/30.4	-1.61	0.1219	NO/NO
2021	43.3/20.4	49.4/24.6	-1.91	0.0564	NO/YES
2020	44.2/20.2	50.2/23.9	-1.90	0.0573	NO/YES
2019	44.2/20.4	50.6/24.2	-2.01	0.0447	YES/YES
2018	45.0/20.6	51.0/24.4	-1.86	0.0623	NO/YES

Table 2 Financial Performance Ratio (EBIT Margin)

Year	GWI49	GWI350	Z	p	SS (.05/.10)
2023	5.7/20.4	20.2/16.8	-4.75	0.0000	YES/YES
2022	14.1/9.5	19.6/37.9	-2.26	0.0240	YES/YES
2021	6.9/21.0	15.3/26.8	-2.53	0.0115	YES/YES
2020	12.0/8.7	19.4/14.4	-5.06	0.0000	YES/YES
2019	11.7/11.9	20.2/14.1	-4.57	0.0000	YES/YES
2018	13.2/11.4	19.5/15.4	-3.45	0.0006	YES/YES

The second part deals with _market data using four market variables: Price to sales (Table 3); Five-year total return per annum (Table 4); Unadjusted beta (Table 5); and Unadjusted alpha (Table 6).

Table 3 Market Data Value (Price to Sales)

Year	GW149	GW1350	Z	p	SS (.05/.10)
2023	1.35/0.83	4.46/4.54	-11.52	0.0000	YES/YES
2022	1.52/0.97	4.34/3.57	-11.53	0.0000	YES/YES
2021	2.30/1.69	6.09/5.87	-9.55	0.0000	YES/YES
2020	2.25/2.26	4.81/4.80	-5.48	0.0000	YES/YES
2019	2.38/2.63	4.38/4.00	-4.63	0.0000	YES/YES
2018	1.77/1.20	3.74/3.39	-7.90	0.0000	YES/YES

Table 4 Market Data Value (Five-year Total Return per annum)

Year	GW149	GW1350	Z	p	SS (.05/.10)
2023	-0.7/8.3	10.6/10.4	-8.63	0.0000	YES/YES
2022	0.5/8.1	10.9/9.60	-8.21	0.0000	YES/YES
2021	4.9/8.6	16.2/13.0	-8.01	0.0000	YES/YES
2020	5.1/9.8	13.3/13.7	-5.19	0.0000	YES/YES
2019	5.8/9.8	12.2/10.6	-4.24	0.0000	YES/YES
2018	7.9/9.4	13.1/9.80	-3.61	0.0000	YES/YES

Table 5 Market Data Value (Unadjusted Beta)

Year	GW149	GW1350	Z	p	SS (.05/.10)
2023	0.98/0.38	1.06/0.42	-1.36	0.1733	NO/NO
2022	0.96/0.34	1.06/0.43	-1.86	0.0627	NO/YES
2021	1.02/0.34	1.09/0.53	-1.24	0.2132	NO/NO
2020	1.07/0.40	1.10/0.58	-0.46	0.6445	NO/NO
2019	1.04/0.38	0.99/0.50	0.83	0.4086	NO/NO
2018	0.97/0.39	0.98/0.49	-0.16	0.8710	NO/NO

Table 6 Market Data Value (Unadjusted Alpha)

Year	GW149	GW1350	Z	p	SS (.05/.10)
2023	-0.83/0.77	0.05/0.79	-7.47	0.0000	YES/YES
2022	-0.61/0.73	0.20/0.76	-7.24	0.0000	YES/YES
2021	-0.82/0.80	-0.02/1.11	-6.21	0.0000	YES/YES
2020	-0.55/0.87	0.06/1.15	-76.52	0.0000	YES/YES
2019	-0.24/0.86	0.27/0.89	-3.87	0.0001	YES/YES
2018	-0.04/0.83	0.33/0.83	-2.92	0.0035	YES/YES