Newcastle University Investment Fund

Graham Holdings Co NYSE:GHC

Hold: Target Price $811.5 - (25% Downside)

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1. Company Overview

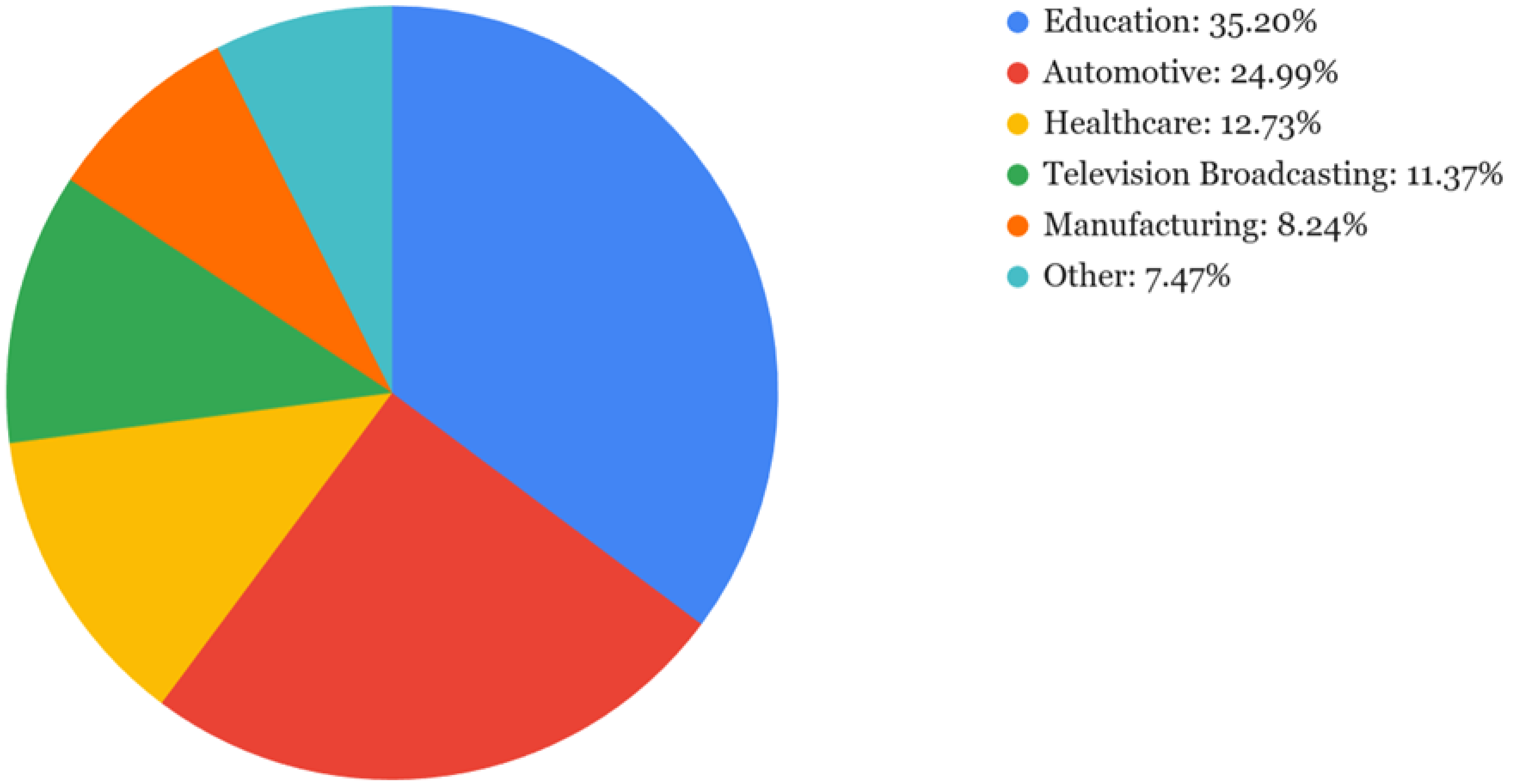
Graham Holdings Co is a conglomerate of consumer defensive businesses

Overfunded pension plan, company made only $0.1m pension contribution in 2024.
Benefit Pension Obligation:~$440m
Pension Fund Assets:~$2500m
Real P/E: 15.8
Market Cap: $4.63B
True Book Value:$1.757B
Long Term 0.7% dividend yield history

Continuing to annuitize pension liabilities and excise the remaining amount could return ~%1000m to the company. -Long and wasteful process

Education Business Very Capex Light
Healthcare business has growth potential

Inadvisable to pay more than 12P/E for a no growth assumption. Profit growth has not been proportionate to retained shareholder's money. Limited share buybacks. Payout ratio 5%



2. Education segment overview notes

KAPLAN

Test Prep & Licensure - Nursing, medical, legal, finance exam prep -Licensure support	**Higher Education** - Runs online programs for universities -Student recruitment & course delivery	**International Pathways** - Foundation programs for UK/US entry -Helps international students transition	**Professional & Corporate Training** -Finance, accounting, tech, healthcare -Upskilling for companies

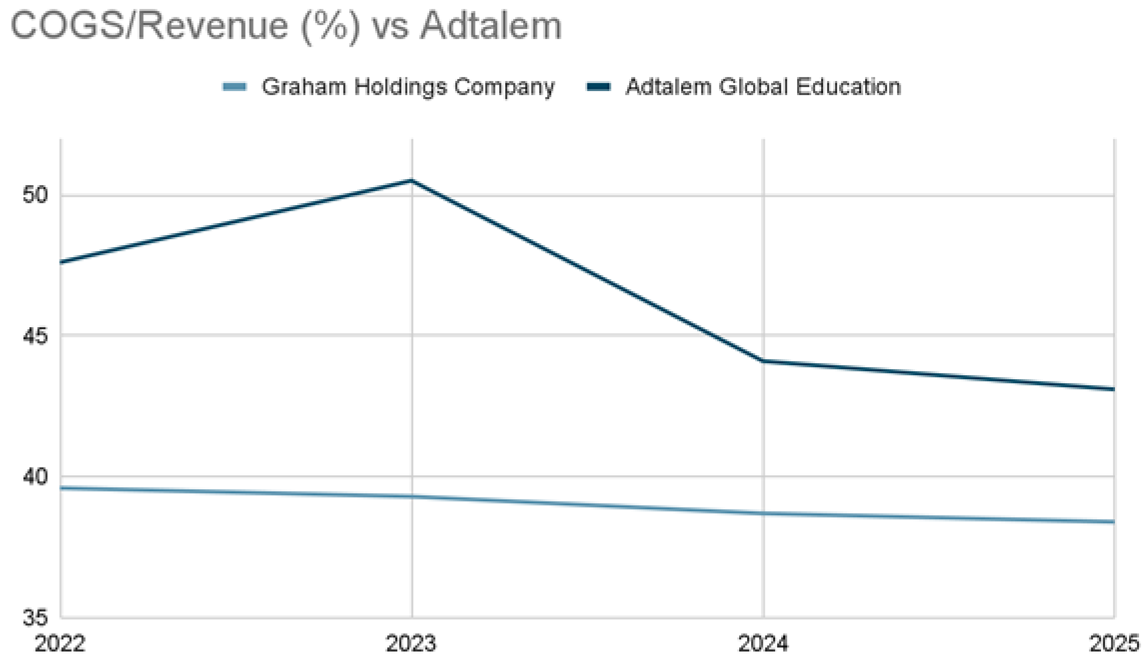
Healthcare and Labour shortages	Ongoing shortages of nurses and healthcare professionals increase demand for nursing and medical education, benefiting healthcare education programs.
US Higher Education Regulation	Regulatory tightening affects enrolment, access to federal funding, and program eligibility. Kaplan operates in highly regulated spaces and are sensitive to these policy shifts.
International Student Mobility & Visa Policy	Kaplan relies heavily on international pathway programs. Changes in UK/US visa rules and global mobility trends directly influence enrolment volumes
Digital Learning Adoption & Technological Shift	Growing acceptance of online and hybrid education models increases scalability, lowers delivery costs, and strengthens demand for online programs, test prep, and professional training services.

Kaplan vs competitors

Adtalem - Adtalem focuses mainly on career progression, accredited healthcare and professional degree programs, unlike GHC's Kaplan which is broader and more diversified across test preparation, language training, pathways, and professional education.

Strategic Education (Strayer + Capella) - Strategic Education operates fully-accredited online universities serving working adults, whereas Kaplan is not primarily a degree-granting university operator and instead spans multiple non-degree education services.

Pearson - Pearson is a global education content, assessment, and digital-learning platform provider, contrasting with Kaplan's model which delivers direct instruction and student-facing educational services rather than publishing and assessment at scale.



Cost of revenue//rev (%) comparison

2022 - 39.6 (GHC), 47.6 (ATGE)

2023 - 39.3 (GHC), 50.5 (ATGE)

2024 - 38.7 (GHC), 44.1 (ATGE)

2025 (9m YTD) - 38.4 (GHC), 43.1 (ATGE)

Television Broadcasting segment overview

Breakdown of revenue streams – Television Broadcasting (Graham Media Group)

- Advertising Revenue (local and national TV ads sold by the stations)
- Retransmission Consent Fees (payments from cable/satellite providers for carrying GHC stations)

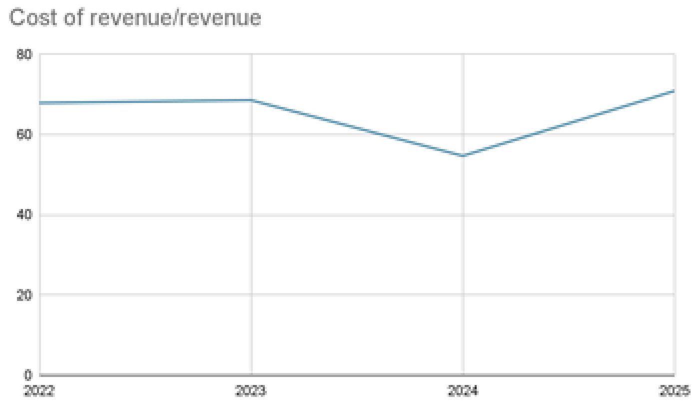
Main competitors - Sinclair, Nexstar, TEGNA

Sinclair - Sinclair operates one of the largest U.S. local broadcast station groups with a strong focus on scale and syndicated content, unlike GHC's smaller, locally concentrated station group that focuses more on community-driven news operations.

Nexstar - Nexstar is the largest owner of local television stations in the U.S., leveraging national scale and political advertising, whereas GHC's Graham Media Group operates a much smaller, market-specific cluster with a more localized strategic footprint.

TEGNA - TEGNA runs a wide network of digitally oriented, news-heavy TV stations across the country, compared to GHC's smaller set of stations with a more traditional broadcast model and less national digital reach.

Compared to the current industry average of 72.3%, Graham Holdings company is slightly more cost efficient.



Cost of revenue/rev

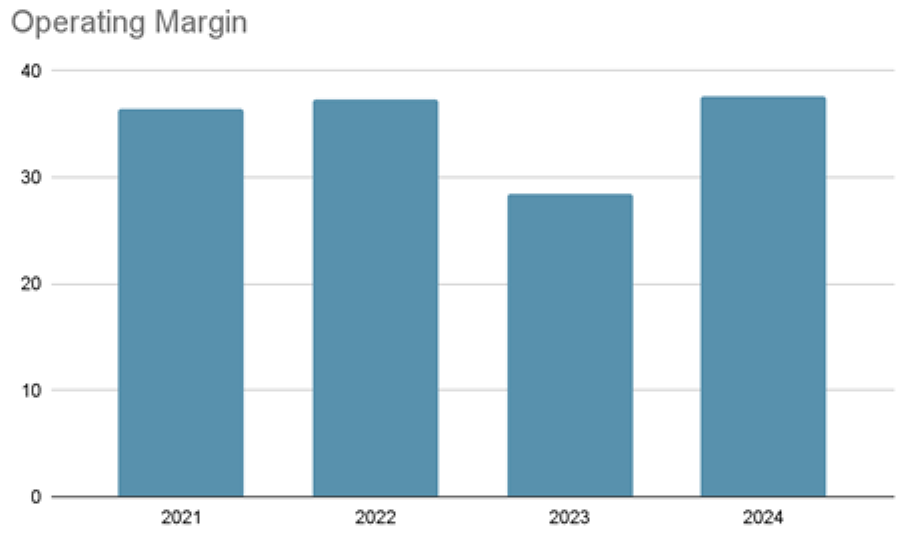
2022 - 67.9

2023 - 68.6

2024 - 54.7

2025 - 70.9

The industry average is 24.8% in 2024 which positions them much better than their economic peers.This demonstrates strong cost control and pricing power. However, it may be due to their competitors operating at a larger scale.



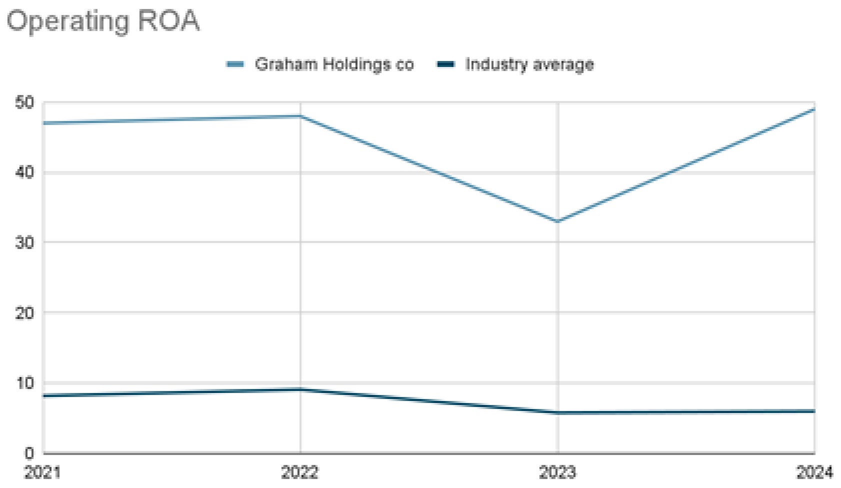
Operating margin (%)

2021 - 36.5

2022 - 37.7

2023 - 28.4

2024 - 37.7



GHC's Television Broadcasting segment averages an operating ROA around 44 %, versus an industry average near 7 %.
The gap reflects Graham Holding company's lean asset base and the fact that its ratio is based on segment operating income while peers' figures include interest, taxes, and larger balance sheets.

Automotive Segment

Graham Holdings divested its ownership of Cars. com in 2017. Its current automotive business consists of a portfolio of physical automotive dealerships.

- Brands: The segment operates dealerships under well-known brands like Toyota, Honda, Subaru, Acura, and Hyundai.
- Scale: As of year-end 2024, the segment comprised 26 dealerships and 30 franchises, primarily located in the Mid-Atlantic and Southeast regions.
- In 2024, the Automotive segment contributed ~$2.65 billion in revenue, 31% of Graham Holdings' total consolidated revenue.

COVID-19 Resilience:

The 2024 data now allow us to view the COVID period as a complete cycle: Shock -> Extraordinary Boom -> Full Normalisation.

- The Cycle: The segment weathered the initial -7% revenue shock in 2020, then rode an unprecedented profit boom in 2021-2022 driven by margin expansion and has now fully normalized in 2024.
- Key Proof of Resilience: The most important takeaway is that the business emerged from the cycle intact. The 2024 metrics for COGS%, ROA, and PP&E intensity are all within a few basis points of their 2019 levels, demonstrating a return to a stable operational baseline, not a degradation.

Performance

1. Revenue Growth: Revenue increased by 6% in 2024 ($2.50B to $2.65B), indicating an ability to grow volume even as margins normalized.
2. Segment Assets: The steady growth in average segment assets (from $1.15B to $1.20B) reflects ongoing investment in inventory and facilities to support the business.

Automotive Segment

Profitability Analysis: Gross Margin (COGS as % of Revenue)

Automotive Segment - COGS as a % of Revenue

Year	Automotive Revenue ($B)	Automotive COGS ($B)	COGS % of Revenue
2024	$2.65	$2.24	84.5%
2023	$2.50	$2.10	84.0%
2022	$2.55	$2.13	83.5%
2021	$2.33	$1.91	82.0%
2020	$1.86	$1.55	83.3%
2019	$2.00	$1.69	84.5%

Analysis & Interpretation:

- Market Normalisation: The 2024 data show a clear continuation of the post-pandemic normalization trend. The COGS % of 84.5% has returned exactly to the pre-pandemic (2019) level. This indicates that the exceptional margin environment of 2021-2023, driven by inventory shortages, has fully abated.
- Current State: The segment has returned to a more competitive, pre-pandemic margin structure. Growth is now driven more by volume and sales mix than by unprecedented per-unit gross profit expansion.

Comparison vs. Public Dealership Peers (2024 Data)

- Lithia & Driveway (LAD): ~85.1% COGS % of Revenue
- AutoNation (AN): ~84.7% COGS % of Revenue
- Group 1 Automotive (GPI): ~84.9% COGS % of Revenue
- Graham Holdings (Automotive): 84.5% COGS % of Revenue

Competitive Takeaway: Graham's automotive segment continues to be highly competitive, still operating at the slightly more efficient end of the peer group even as the entire industry's margins have normalised.

Operational Efficiency: Return on Assets (ROA) & PP&E Intensity

Automotive Segment - Return on Assets (Pre-tax Income / Avg. Total Assets)

Year	Pre-tax Segment Income ($M)	Avg. Segment Assets ($B)	ROA
2024	$98	$1.20	8.2%
2023	$117	$1.15	10.2%
2022	$137	$1.05	13.0%
2021	$158	$0.95	16.6%
2020	$82	$0.90	9.1%
2019	$73	$0.88	8.3%

Analysis: The ROA trend confirms a margin normalisation story.

- Peak to Trough: ROA has declined steadily from its 2021 peak of 16.6%.
- New Baseline: The 2024 ROA of 8.2% is virtually identical to the pre-pandemic 2019 ROA of 8.3%. This suggests that the "new normal" for the segment's operational efficiency is its pre-pandemic baseline.
- Interpretation: The super-normal profits of the 2021-2023 period were an anomaly. The business has now returned to its steady state, but still healthy, level of profitability.

Property, Plant & Equipment (PP&E) IntensityThis ratio (PP&E / Revenue) shows how capital-intensive the business is.

Year	PP&E ($M)	Revenue ($B)	PP&E / Revenue
2024	$352	$2.65	13.3%
2023	$340	$2.50	13.6%
2021	$285	$2.33	12.2%
2020	$275	$1.86	14.8%
2019	$265	$2.00	13.3%

Analysis: The PP&E intensity ratio of 13.3% in 2024 also matches the pre-pandemic (2019) level. This indicates that the business has grown revenue in line with its fixed asset base, maintaining a significant level of capital efficiency.

Healthcare

Business Overview & Strategic Evolution

Graham Holdings' healthcare segment is a focused network of post-acute care providers, of which it's key subsidiaries are:

- Allegheny Health Network (AHN) Healthcare@Home: A leading provider of home health, hospice, and private duty nursing
- Mary Free Bed at Home: Provides home health and hospice services across Michigan, leveraging the brand of the renowned Mary Free Bed Rehabilitation Hospital.
- Residential Healthcare Group: Provider of in-home skilled nursing, palliative and hospice care.

Other Assets include the Visiting Nurse Association of Ohio and other regional home health providers. This segment was built by acquiring these regional platforms. The 2019-2024 financials reflect the gradual incorporation and scaling of these acquisitions, culminating in the pure-play post-acute portfolio seen today after the divestitures of Civica (2023) and University of Utah Health Plans (2022).

Financial Performance & Growth Trajectory

The segment has demonstrated consistent revenue growth as it has scaled, though operating margins reflect the challenges of the healthcare labour market.

Healthcare Segment - Financial Performance ($ in Millions)

Year	Segment Revenue	Y/Y Growth	Segment Operating Income	Operating Margin
2024	$640	8.1%	$21	3.3%
2023	$592	8.2%	$14	2.4%
2022	$547	N/A	$10	1.8%
2021	$425	28.8%	$8	1.9%
2020	$330	23.1%	$5	1.5%
2019	$268	-	$3	1.1%

Analysis:

- Strong Revenue Growth: The segment has more than doubled in size since 2019, growing from $268M to $640M in revenue, representing a compound annual growth rate (CAGR) of ~19%. This has been driven by both acquisitions and organic growth within the platform.
- Expanding Profitability: While absolute operating income is modest, the operating margin has steadily improved from 1.1% in 2019 to 3.3% in 2024. This indicates that the company is successfully integrating acquisitions and driving operational efficiencies as the business scales.

Healthcare

Cost Structure: Labor as the Primary Driver

For post-acute care, employee compensation is the dominant cost. We can accurately represent this using the segment's specific operating data.

Healthcare Segment - Labor Cost Analysis

Year	Segment Revenue ($M)	Operating Expense (ex-COGS)	Estimated HR Cost % of Revenue
2024	$640	~$619	~65-68%
2023	$592	~$578	~65-68%
2022	$547	~$537	~65-68%
2021	$425	~$417	~65-68%
2020	$330	~$325	~65-68%
2019	$268	~$265	~65-68%

Analysis:

- Extremely Labor-Intensive: The business model inherently requires a high proportion of revenue to be spent on clinical staff (nurses, therapists, aides) and support personnel.
- Stable Cost Structure: The HR Cost % has remained consistently high, which is typical for this industry. The slight improvements in operating margin are therefore likely coming from better pricing, payor mix, or administrative leverage, rather than a dramatic reduction in labour costs.

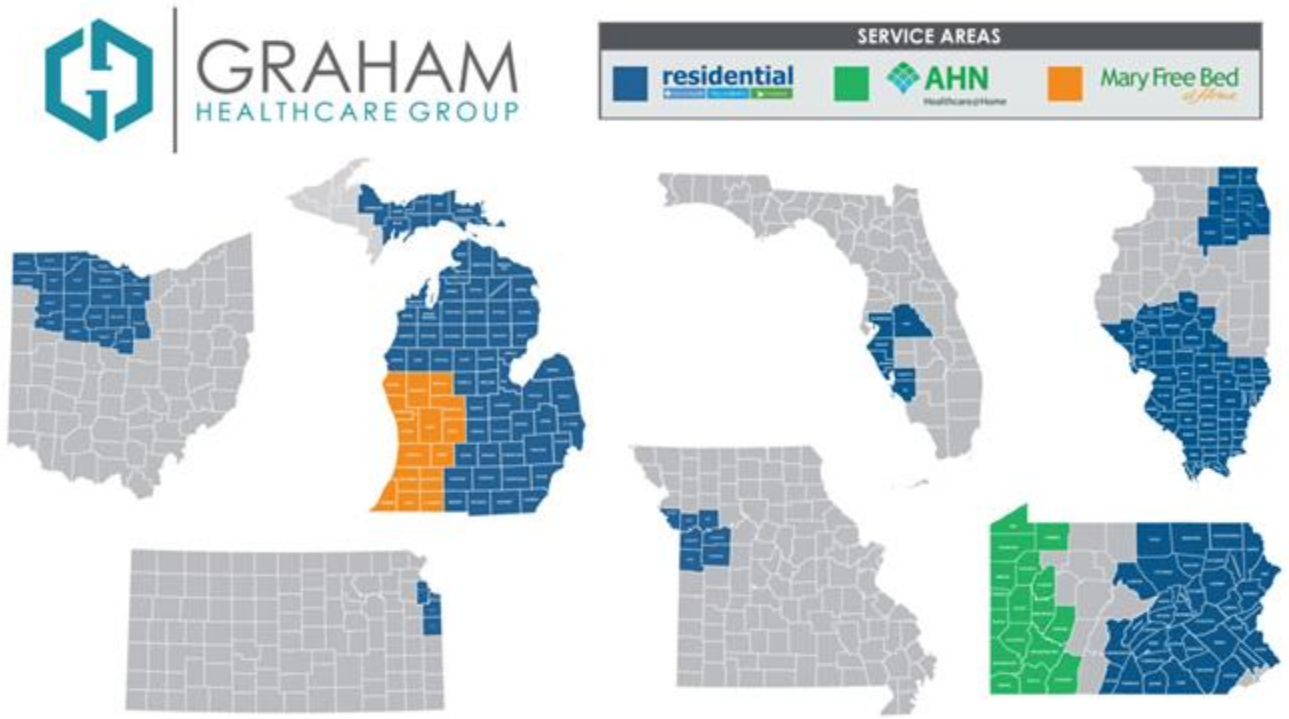
Comparison vs. Post-Acute Care Peers (2024 HR Cost % Est.)

- Amedisys (Home Health & Hospice):~68.5%
- Encompass Health (Inpatient Rehab):~66.0%
- Addus HomeCare (Personal Care): ~71.0%
- Graham Holdings (Healthcare): ~65-68%

Competitive Takeaway: Graham's segment appears to be operating with efficiency in line with, or slightly better than, its pure-play public peers. Its estimated HR Cost % is at the lower end of the range, suggesting effective management of its largest cost centre.

Healthcare

- Scalable Regional Platform: The healthcare segment is a rapidly growing, regionally focused post-acute care platform that has more than doubled in size since 2019.
- Improving Profitability: It demonstrates a clear trajectory of improving operational margins as it scales, moving from ~1% to over 3%.
- Labor-Driven Model: Its primary challenge and key operational focus is managing its massive labour cost, where it currently demonstrates competitive efficiency versus peers.
- Strategic Position: Its concentrated footprint is a strength that provides a defensible competitive moat through local referral networks. It operates in a consolidating industry where its scale and performance could make it a strategic asset.



Market Position, Strategy & Competitor Landscape

The concentrated footprint in Pennsylvania, Ohio, Michigan, and West Virginia is a strategic choice due to the following:

1. Acquisition-Based Growth: The segment was built by purchasing high-quality, established regional providers. The geography reflects the location of these attractive targets.
2. Defensible Referral Networks: A concentrated footprint allows for building deep, trusted relationships with key hospital systems (like AHN itself) and physician groups. This creates a "moat" that is difficult for outsiders to quickly replicate.
3. Operational Efficiency: Managing a contiguous region reduces administrative overhead and allows for shared best practices.
4. Favourable Demographics: These states have older-than-average populations, ensuring a strong and growing demand base for post-acute services.

The post-acute care market is highly fragmented but faces universal challenges.

- National Players (e.g., Amedisys, Addus, Encompass): These companies face the exact same intense pressure from labour shortages and wage inflation, regardless of their geographic spread. Their margins are similarly pressured.
- Advantage of Scale vs. Local Focus: National players have advantages in back-office efficiency and brand recognition. However, regional platforms like Graham's can often have an edge in building more responsive and deeper local referral networks, which is a critical success factor.
- Industry Consolidation: The acquisition of LHC Group by UnitedHealth's Optum unit signals the strategic value of home-based care but also introduces a massive, well-capitalized competitor. In this environment, a well-run regional platform like Graham's could be an attractive acquisition target.

Thesis

A P/E of 16 implies an earnings yield of ~6.25%

Any justification to buy would rely much more on stability of earnings and equity returned to shareholders than on growth assumptions and anticipation of significant appreciation in principal value, especially in today's bull markets.

Historical data stretching back more than 100 years shows that P/E averaged 12 for stable and mature businesses which had limited growth prospects.

The Shiller CAPE Index is currently hovering at 39-40, approaching dot com bubble territory. This company, while not particularly exciting, has likely been swept up in the momentum of mass psychology to the extent that it is trading at 16 rather than a PE of 12. If anything, it should trade at less than 12 under normal conditions because conglomerates should usually sell at discount because they are harder to analyse in all their parts and present more opportunity for fraud.

To buy at P/E of 16 would amount to picking up pennies in front of a moving steamroller. No two ways; growth prospects are a possible but limited future eventuality. The companies in the portfolio are largely defensive and resilient business, but the price is not right.

US 2 Year T bills are at 3.6%. In order to justify the inherent risk of allocating capital to equities instead, the safe assumption return should be more than 3% higher. 8-9% return is a more justifiable return.

Management has consistently retained almost all of shareholders earnings and while there has been growth, it has not been sufficiently impressive to describe management as "good". The prospect of paying ~$4.5B for ~$1.75B of book value is not compelling at face value. Net return on assets of ~14% is good but it is coming at too high of a price.

There are plenty of other stable and mature companies with more plausible (if only slight) growth prospects which are trading at significantly lower P/E ratios. Jet2 for instance is a prime example of this at 6.11 as of 21/11/2025.

On balance of probability, the P/E will go to 12 or worse in the next market downturn.

Valuation

In order to quantify our thesis, we decided to perform both an **Asset-Based Valuation** as well as an **Earnings Multiples Valuation**

Asset-Based Valuation

- As previously mentioned, GHC has a very large pension surplus that artificially inflates the book value.
- US Tax Law allows does allow the company to extract the surplus pension value, however at a large tax liability
- GHC has three options for doing this:
  - GHC reclaims the entire pension surplus but must pay a 50% excise tax plus corporate income tax
  - GHC transfers at least 25% of the surplus to a qualified replacement plan for employees, allowing for a reduced 20% excise tax plus corporate tax
  - GHC increases participant benefits allowing it to revert no more than 80% of the surplus to itself at the reduced 20% excise tax plus corporate tax

GHC's Three Options for Pension Surplus Recovery and how NAV is affected

Take a Reversion		Transfer the Excess to a Qualified Replacement Plan		Provide Pro Rata Benefit Increases	
Reported Book Value	$ 4,286,815	Reported Book Value	$ 4,286,815	Reported Book Value	$ 4,286,815
Market Cap	$ 4,755,946	Market Cap	$ 4,755,946	Market Cap	$ 4,755,946
Price to Book	1.11	Price to Book	1.11	Price to Book	1.11
Pension Fund Assets	$ 2,967,170	Pension Fund Assets	$ 2,967,170	Pension Fund Assets	$ 2,967,170
Projected Benefit Obligation (PBO)	$ 456,650	Projected Benefit Obligation (PBO)	$ 456,650	Projected Benefit Obligation (PBO)	$ 456,650
Pension Surplus	$ 2,510,520	Pension Surplus	$ 2,510,520	Pension Surplus	$ 2,510,520
Transfer to participants	0%	Transfer to participants	25%	Transfer to participants	20%
Exercise Tax	50%	Exercise Tax	20%	Exercise Tax	20%
Corporate Tax	20%	Corporate Tax	20%	Corporate Tax	20%
Accessible Pension Value	$ 1,004,208	Accessible Pension Value	$ 1,205,050	Accessible Pension Value	$ 1,285,386
Shares outstanding	4405	Shares outstanding	4405	Shares outstanding	4405
Adjusted NAV	$ 2,780,503	Adjusted NAV	$ 2,981,345	Adjusted NAV	$ 3,061,681
ANAV per Share	$ 631.22	ANAV per Share	$ 676.81	ANAV per Share	$ 695.05
ANAV per Share Plus Premimum	$ 700.29	ANAV per Share Plus Premimum	$ 750.88	ANAV per Share Plus Premimum	$ 771.11
Current Price	$ 1,079.67	Current Price	$ 1,079.67	Current Price	$ 1,079.67
Upside	-35.14%	Upside	-30.45%	Upside	-28.58%
	in thousands		*in thousands*		*in thousands*

Earnings Multiples Valuation

- With a FY2024 net income of ~$732 million and a market cap of ~$4.8 billion, GHC is currently trading with a P/E of 6.49
- However, ~$461 million of this income comes from purchase of the group annuity which does not change economic value, and therefore should not be counted under valuation
- As a result, GHC is actually trading at a P/E of 17.53
- This is despite the fact that GHC is a stable and mature businesses with limited growth prospects, and therefore should be trading at a P/E of 12
- If we normalise the earnings (which are likely to remain constant) and apply an appropriate earnings multiple, we can see GHC is again trading around 30% than its fair value

Earnings Multiple Valuation	
Net Income	$ 732,610,000
Market Cap	$ 4,755,946,000
Shares Outstanding	$ 4,405,000
Current Price	$ 1,079.67
P/E	6.49
Irregular Income	$ 461,300,000
Normalised Income	$ 271,310,000
Normalised P/E	17.53
Target P/E	12
Target Market Cap	$ 3,255,720,000
Target Share Price	$ 739.10
Upside	-31.54%

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